

## Compilation of Changes to the CPC Scheme Between 2015.09 and 2015.10

### Presentation Details

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

### Project: N/A (A01B)

- U A01B 59/00** **Devices specially adapted for connection between animals or tractors and agricultural machines or implements ([A01B 63/00](#) takes precedence; vehicle connections in general [B60D](#); draught assemblies for animal drawn vehicles, in general [B62C 5/00](#))**
- U A01B 59/06
- A01B 59/061
- for machines mounted on tractors
  - {specially adapted for enabling connection or disconnection controlled from the ~~driver's~~*driver's* seat (not used, see subgroups)}
- U A01B 71/00** **Construction or arrangement of setting or adjusting mechanisms, of implement or tool drive or of power take-off; Means for protecting parts against dust, or the like; Adapting machine elements to or for agricultural purposes {(adjusting mechanisms in general [G05G](#))}**
- U A01B 71/06
- A01B 71/063
- Special adaptations of coupling means between power take-off and transmission shaft to the implement or machine (couplings for transmitting rotation [F16D](#))
  - {for enabling transmission coupling and connection between tractor and implements to be controlled from the ~~driver's~~*driver's* seat}

### Project: N/A (A01D)

- U A01D 46/00** **Picking of fruits, vegetables, hops, or the like; Devices for shaking trees or shrubs**
- NOTE
- In this group, group [A01D 46/30](#) takes precedence over groups [A01D 46/02](#) to [A01D 46/28](#)
- U A01D 46/26
- A01D 46/264
- Devices for shaking trees or shrubs; Fruit catching devices to be used therewith ([A01D 46/28](#) takes precedence)
  - {Devices for beating or vibrating the foliage; Fruit catching devices to be used therewith}
- U A01D 69/00** **Driving mechanisms or parts thereof for harvesters or mowers (driving mechanisms for the cutters of mowers or harvesters [A01D 34/00](#))**
- A01D 69/007
- {with separate hand drive for cutting tools}

### Project: MP0124 (A01D)

- U A01D 89/00** **Pick-ups for loaders, chaff-cutters, balers, field-threshers, or the like {i.e. attachments for picking-up hay or the like field crops (field threshers with windrow pick-up apparatus [A01D 41/10](#))}**
- U A01D 89/006
- {Accessories (feeding devices for baling presses [A01F 15/10](#); for cutting machines [A01F 29/10](#))}

M A01D 89/007

- {Devices for preparing the picking-up of the ~~window~~[windrow](#)}

**Project: N/A (A01K)**

A01K 55/00

Bee-smokers; Bee-keepers' accessories, e.g. veils ({smoke-generators for gardens or orchards [A01G 13/06](#), for killing insects [A01M 13/006](#), for killing rats [A01M 17/004](#)}; smoking pipes [A24F](#))

**Project: N/A (A01L)**

A01L 11/00

Farriers' tools and appliances (making horseshoes by rolling [B21H 7/12](#), by forging [B21K 15/02](#))

**Project: N/A (A21B)**

A21B

BAKERS' OVENS; MACHINES OR EQUIPMENT FOR BAKING (domestic baking equipment [A47J 37/00](#); combustion apparatus [F23](#); domestic stoves or ranges being wholly or partly ovens [F24B](#), [F24C](#))

A21B 1/00

Bakers' ovens

U A21B 3/00

Parts or accessories of ovens

A21B 3/003

- {~~Baker's~~[Baker's](#) peels}

**Project: N/A (A21D)**

U A21D 8/00

Methods for preparing dough or for baking ([A21D 2/00](#) takes precedence)

A21D 8/06

- Baking processes (~~bakers' ovens~~ [A21B](#) [bakers' ovens](#) [A21B](#))

**Project: N/A (A23K)**

U A23K 1/00

Animal feeding-stuffs (detoxicating or removing bitter tastes from seeds, e.g. lupin seeds for fodder or food [A23L 1/211](#))

A23K 1/06

- from distillers' or brewers' waste

U A23K 1/14

- from vegetable materials, e.g. potatoes or roots without ensilaging (preserving food [A23B](#), [A23L](#))

A23K 1/146

- {from vegetable offal material (molasses [A23K 1/02](#); ~~distillers' and brewers' waste~~ [A23K 1/06](#); [distillers' and brewers' waste](#) [A23K 1/06](#); from wood or straw [A23K 1/12](#))}

**Project: N/A (A23L)**

U A23L 1/00

Foods or foodstuffs; Their preparation or treatment (preservation thereof in general [A23L 3/00](#); {mechanical aspects [A23P](#)})

WARNING

Groups [A23L 1/0002](#) to [A23L 1/0097](#) might be incomplete as a number of documents presently classified in groups [A23P 1/00](#) to [A23P 1/16](#), still needs reclassification to groups [A23L 1/0002](#) to [A23L 1/0097](#)

U A23L 1/22

- Spices; Flavouring agents or condiments; Artificial sweetening agents; Table salts; Dietetic salt substitutes; {Other taste or flavour affecting agents}

U A23L 1/226

- • Synthetic spices or flavouring agents or condiments

U A23L 1/227

- • • containing amino acids

A23L 1/2275

- • • {heated in the presence of reducing sugars or the like, e.g. [Maillard's](#) [Maillard's](#) non-enzymatic browning}

U A23L 1/31

- Meat products; Meat meal (working-up proteins for foodstuffs [A23J 3/00](#))

- U A23L 1/318      • • Tenderised or flavoured meat pieces, e.g. obtained by injecting solutions; Macerating solutions
- A23L 1/3187      • • • {by treatment in a gaseous atmosphere, e.g. aging, ripening; by electrical treatment or irradiation or wave treatment}

**Project: N/A (A23N)**

- U A23N 15/00      **Machines or apparatus for other treatment of fruits or vegetables for human purposes; Machines or apparatus for topping or skinning flower bulbs {(treatment of coffee, other than drying or roasting [A23F](#); treatment of cocoa [A23G 1/02](#))}**
- A23N 15/01      • for stripping Brussels<sup>˘</sup> sprouts from stalks

**Project: N/A (A24)**

A24      **TOBACCO; CIGARS; CIGARETTES; SMOKERS<sup>˘</sup> REQUISITES**

**Project: N/A (A24B)**

- U A24B 15/00      **Chemical features or treatment of tobacco; Tobacco substitutes ([A24B 3/00](#) takes precedence)**
- U A24B 15/18      • Treatment of tobacco products or tobacco substitutes
- U A24B 15/28      • • by chemical substances
- U A24B 15/30      • • • by organic substances {([A24B 15/281](#) takes precedence)}
- U A24B 15/305      • • • • {of undetermined constitution characterised by their preparation}
- A24B 15/306      • • • • • {one reactant being an amino acid or a protein, e.g. ~~Maillard's~~ *Maillard's* reaction ([A24B 15/307](#) takes precedence)}

**Project: N/A (A24F)**

- A24F      **SMOKERS<sup>˘</sup> REQUISITES; MATCH BOXES (lighters [F23Q](#))**
- A24F 1/00      **Tobacco pipes (~~bee-keepers` pipes~~ ~~A01K 55/00~~ *bee-keepers' pipes* [A01K 55/00](#))**
- A24F 9/00      **Accessories for smokers<sup>˘</sup> pipes**
- A24F 19/00 -  
A24F 47/00      **Other smokers<sup>˘</sup> requisites**
- A24F 21/00      **Stands for smokers<sup>˘</sup> requisites**
- A24F 47/00      **Smokers<sup>˘</sup> requisites not provided for elsewhere, {e.g. devices to assist in stopping or limiting smoking (devices for opening cigarette packages [B65B 69/0033](#))}**
- A24F 2700/00      **Tobacco pipes; Bad-covers or accessories for smokers<sup>˘</sup> pipes**
- A24F 2700/08      • Bowl-covers or accessories for smokers<sup>˘</sup> pipes

**Project: N/A (A41B)**

- A41B 13/00      **Baby linen (~~babies` napkins or holders therefor~~ ~~A61F 13/15~~; {~~patients` garments specially adapted for babies~~ ~~A41D 13/1272~~} *babies' napkins or holders therefor* [A61F 13/15](#); {*patients' garments specially adapted for babies* [A41D 13/1272](#)})**
- A41B 13/04      • Babies<sup>˘</sup> pants (combined with swabs or absorbent pads or specially adapted for supporting them [A61F 13/15](#))

**Project: MP0124 (A41C)**

- U A41C 1/00 Corsets or girdles (corsets fasteners [A41F 1/04](#); orthopaedic corsets [A61F 5/02](#))
- U A41C 1/12 · Component parts
- U A41C 1/14 · · Stays; Steels
- M A41C 1/16 · · · made ~~or of~~ wire
- M A41C 1/20 · · · with protective ~~type~~ caps

**Project: N/A (A41D)**

- A41D 13/00 Professional, industrial, or sporting protective garments, e.g. garments affording protection against blows or punches, ~~surgeon's~~ [surgeon's](#) gowns (helmets [A42B 3/00](#); clothing affording protection against {heat or harmful} chemical agents or for use at high altitudes [A62B 17/00](#); life-saving garments for use at sea, diving-bell suits [B63C](#); bulletproof or armoured clothing [F41H](#); clothing affording protection against radiation [G21F 3/02](#); electric heating elements [H05B](#))
- U A41D 13/002 · with controlled internal environment {(ventilating means [A41D 27/28](#))}
- U A41D 13/005 · · with controlled temperature
- A41D 13/0051 · · · {Heated garments (~~heated divers' suits~~ [B63C 11/28](#) ~~heated divers' suits~~ [B63C 11/28](#))}
- A41D 13/02 · Overalls {(~~patients' suits~~ [A41D 13/1263](#), ~~babies' overalls~~ [A41B 13/005](#) ~~patients' suits~~ [A41D 13/1263](#), ~~babies' overalls~~ [A41B 13/005](#))}
- U A41D 13/04 · Aprons; Fastening devices for aprons
- A41D 13/043 · · {Aprons resistant to mechanical aggressions, e.g. ~~butcher's~~ [butcher's](#) aprons}
- A41D 13/12 · Surgeons' or patients' gowns or dresses {(operating gloves [A61B 19/04](#))}
- A41D 13/1209 · · {Surgeons' gowns or dresses}
- A41D 13/1236 · · {Patients' garments}
- U A41D 19/00 Gloves ({brush bodies shaped as gloves [A46B 5/04](#); gloves for washing the body [A47K 7/02](#); gloves for domestic washing or cleaning [A47L 13/18](#); operating gloves [A61B 19/04](#); swimming gloves [A63B 31/02](#); as accessories for games or sports, e.g. baseball, boxing or golf gloves [A63B 71/14](#); gloves for glove-boxes [B25J 1/02](#))
- U A41D 19/015 · Protective gloves {([A41D 19/0055](#) takes precedence)}
- U A41D 19/01505 · · {resistant to mechanical aggressions, e.g. cutting. piercing}
- A41D 19/01511 · · · {made of wire-mesh, e.g. butchers' gloves}

**Project: N/A (A41F)**

- A41F 1/00 Fastening devices specially adapted for garments ({for pairing socks [A41B 11/002](#); for fur garments [A41D 5/006](#)}; fastening devices in general [A44B](#); ~~{for babies' napkins~~ [A61F 13/56](#); ~~{for babies' napkins~~ [A61F 13/56](#)})

**Project: N/A (A42B)**

- U A42B 1/00 Hats; Caps; Hoods
- U A42B 1/04 · Soft caps; Hoods
- U A42B 1/08 · · with protection against blows (head-guards for sporting purposes [A63B 71/10](#))
- A42B 1/10 · · · Miners' caps {([A42B 3/04](#) takes precedence)}
- A42B 1/16 · Ladies' millinery

**A42B 7/00**

Fastening means for head coverings; Elastic cords; Ladies' hat fasteners (hat-pins [A44B 9/06](#))

**Project: N/A (A42C)****U A42C 3/00**

Miscellaneous appliances for hat-making, e.g. for making wire forms for hat-frames (sewing-machines for straw hats [D05B](#); sewing- machines for making hat-brims [D05B](#)); Apparatus for changing the form or size of finished hats

## A42C 3/04

- Stands for trimming ladies' hats

**Project: N/A (A43D)****U A43D 111/00**

Shoe machines with conveyers for jacked shoes {or for shoes or shoe parts}

## A43D 111/003

- {with clamping or gripping mechanism}

## A43D 111/006

- {with special means to place the shoe or shoe part in the following machine}

**Project: N/A (A45B)****A45B**

**WALKING STICKS; UMBRELLAS; LADIES' OR LIKE FANS** (cane or umbrella stands or holders [A47G 25/12](#))

NOTE

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

- "umbrellas" also covers sunshades similar in construction to umbrellas

**A45B 27/00**

**Ladies' or like fans**

**Project: N/A (A45C)****U A45C 3/00**

Flexible luggage; Handbags (collapsible or extensible luggage, bags or the like [A45C 7/00](#); handbag mirrors [A45D 42/04](#); {bags for midwives [A61B 17/48](#); doctors' or nurses' bags [A61B 19/0266](#)})

## A45C 3/06

- Ladies' handbags

**Project: N/A (A45D)****A45D**

**HAIRDRESSING OR SHAVING EQUIPMENT; MANICURING OR OTHER COSMETIC TREATMENT** (wigs, toupees, or the like [A41G 3/00](#), [A41G 5/00](#); ~~hairdressers' chairs~~ [A47C 1/04](#); ~~hairdressers' chairs~~ [A47C 1/04](#); hair cutting appliances, razors [B26B](#))

WARNING

The following IPC groups are not used not used in the CPC scheme. Subject matter covered by this group is classified in the corresponding CPC groups as it follows: - [A45D 97/00](#) covered by [A45D 44/00](#)

**U A45D 19/00**

**Devices for washing the hair or the scalp; Similar devices for colouring the hair**

## A45D 19/0008

- {Devices for colouring or bleaching separated strands of hair, e.g. highlighting ([A45D 19/02](#) and [A45D 19/18](#) take precedence)}

## A45D 19/0016

- {comprising an open, flat support for strands of hair or for wrapping foils during the application of the dyeing product}

## A45D 19/0025

- {comprising wrapping foils or foldable sheets for enclosing a strand of hair during treatment, e.g. frosting foils}

- U A45D 40/00** Casings or accessories for storing or handling solid or pasty toilet or cosmetic substances, e.g. shaving soap, lipstick, make-up (features common to containers for handling powdery or liquid toilet or cosmetic substances [A45D 33/00-A45D 37/00](#); cosmetic or like preparations [A61K 8/00, A61Q](#); sample tables or the like [G09F 5/00](#))
- U A45D 40/22  
A45D 40/221  
A45D 40/222
- Casings characterised by a hinged cover
  - • {Features of the hinge}
  - • {Means for closing the lid}
- U A45D 42/00** Hand, pocket, or shaving mirrors
- U A45D 42/08  
A45D 42/12
- Shaving mirrors
  - • able to be suspended on a ~~person's~~ ~~person's~~ body
- A45D 44/00** Other toilet or cosmetic equipment, e.g. for hairdressers' rooms
- A45D 44/02  
A45D 44/06
- Furniture or other equipment specially adapted for hairdressers' rooms and not covered elsewhere (~~hairdressers' chairs~~ ~~A47C 1/04~~ ~~hairdressers' chairs~~ [A47C 1/04](#))
  - Means specially adapted for suspending hairdressers' machines, e.g. trolleys for electro-motors

**Project: MP0124 (A46B)**

- U A46B 13/00** Brushes with driven brush bodies {or carriers}(power-driven toothbrushes [A61C 17/16](#))
- U A46B 13/001  
M A46B 13/006
- {Cylindrical or annular brush bodies}
  - • {formed by winding a strip tuft in a ~~helice~~ ~~helix~~ about the body}
- U A46B 15/00** Other brushes; Brushes with additional arrangements
- U A46B 15/0002  
M A46B 15/0038  
M A46B 15/004  
M A46B 15/0042  
M A46B 15/0044  
M A46B 15/0046
- {Arrangements for enhancing monitoring or controlling the brushing process}
  - • {with ~~signaling~~ ~~signalling~~ means}
  - • • {with an acoustic ~~signaling~~ ~~signalling~~ means, e.g. noise}
  - • • {with musical ~~signaling~~ ~~signalling~~ means}
  - • • {with light ~~signaling~~ ~~signalling~~ means ([A46B 15/0034](#), [A46B 15/0036](#) takes precedence)}
  - • • {with vibrating ~~signaling~~ ~~signalling~~ means}

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

- U A47B 31/00** Service or tea tables, trolleys, or wagons ({serving trays [A47G 23/06](#)}; features relating to running gear or to movement by hand [B62B](#))
- A47B 31/06
- adapted to the use in vehicles {(with a set of feet and a part resting on ~~someone's~~ ~~someone's~~ lap [A47B 23/041](#); arrangements or adaptations of tables in vehicles [B60N 3/001](#))}

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

- U A47C 1/00** Chairs adapted for special purposes (features relating to vertical adjustability [A47C 3/20](#); convertible chairs [A47C 13/00](#); chairs or personal conveyances specially adapted for patients or disabled persons [A61G 5/00](#); operating chairs, dental chairs [A61G 15/00](#))
- A47C 1/04  
A47C 1/16
- Hairdressers' or similar chairs, {e.g. beauty salon chairs}
  - {Chairs or} seats detachably mounted on stadium benches (detachably mounted ~~children's~~ ~~children's~~ chairs [A47D 1/10](#))



	<b>A47C 4/00</b>	<b>Foldable, collapsible or dismountable chairs (of tubular metal type <a href="#">A47C 5/10</a>; <del>children`s foldable chairs</del> <a href="#">A47D 1/02</a>; <i>children's foldable chairs</i> <a href="#">A47D 1/02</a>)</b>
U	<b>A47C 7/00</b>	<b>Parts, details, or accessories of chairs or stools (attaching to floor <a href="#">A47B 91/08</a>)</b>
U	<b>A47C 7/02</b>	• Seat parts (adaptation of seats to mounting in tubular chairs <a href="#">A47C 5/06</a> ; such parts not restricted to chairs <a href="#">A47C 23/00</a> ; removable upholstered units or cushions <a href="#">A47C 27/00</a> )
U	<b>A47C 7/34</b> <b>A47C 7/345</b>	• • with springs in compression, e.g. coiled • • • {of adjustable resilience}}
U	<b>A47C 19/00</b>	<b>Bedsteads (spring mattresses with rigid frame or forming part of the bedstead <a href="#">A47C 23/00</a>; bed jointing members or fittings for bedsteads <a href="#">F16B</a>)</b>
	<b>A47C 19/04</b>	• Extensible bedsteads, e.g. with adjustment of length, width, height ( <del>for children`s beds</del> <a href="#">A47D 7/00</a> <i>for children's beds</i> <a href="#">A47D 7/00</a> )
	<b>A47C 21/00</b>	<b>Attachments for beds, e.g. sheet holders, bed-cover holders (bed tables supported on the bedstead <a href="#">A47B 23/02</a>; <del>for children`s beds</del> {<a href="#">A47D 7/00</a>}, <a href="#">A47D 15/00</a>; <i>for children's beds</i> {<a href="#">A47D 7/00</a>}, <a href="#">A47D 15/00</a>); Ventilating, cooling or heating means in connection with bedsteads or mattresses</b>
	<b>A47C 21/006</b>	• {Oscillating, balancing or vibrating mechanisms connected to the bedstead ( <del>for children`s beds</del> <a href="#">A47D 9/02</a> <i>for children's beds</i> <a href="#">A47D 9/02</a> )}
	<b>A47C 21/08</b>	• Devices for prevention against falling-out, e.g. detachable sidewalls ( <del>for children`s beds</del> <a href="#">A47D 7/00</a> <i>for children's beds</i> <a href="#">A47D 7/00</a> )

**Project: N/A (A47D)**

	<b>A47D 1/00</b>	<b><del>Children`s</del> <i>Children's</i> chairs (chairs generally <a href="#">A47C</a>)</b>
U	<b>A47D 3/00</b>	<b>Children's tables {(school desks or tables <a href="#">A47B 41/00</a>; school forms <a href="#">A47B 39/00</a>)}</b>
	<b>A47D 3/005</b>	• {with pivoting or shifting, optionally tipping-up <del>children`s</del> <i>children's</i> chairs mounted thereon}
	<b>A47D 7/00</b>	<b><del>Children`s</del> <i>Children's</i> beds (beds in general <a href="#">A47C</a>)</b>
	<b>A47D 11/00</b>	<b><del>Children`s</del> <i>Children's</i> furniture convertible into other kinds of furniture, e.g. <del>children`s</del> <i>children's</i> chairs or benches convertible into beds; {Constructional play-furniture} (convertible furniture in general <a href="#">A47B 85/00</a>)</b>
	<b>A47D 11/002</b>	• { <del>Children`s</del> <i>Children's</i> chairs convertible into tables}
	<b>A47D 11/005</b>	• {Convertible <del>children`s</del> <i>children's</i> beds}
	<b>A47D 11/007</b>	• • { <del>Children`s</del> <i>Children's</i> beds convertible into <del>children`s</del> <i>children's</i> pens}
	<b>A47D 11/02</b>	• Chairs convertible into <del>children`s</del> <i>children's</i> chairs

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

	<b>A47F 8/00</b>	<b>Dummies, busts or the like, e.g. for displaying garments (<del>tailors` dummies</del> <a href="#">A41H 5/00</a>; <i>tailors' dummies</i> <a href="#">A41H 5/00</a>; {artificial limbs <a href="#">A61F</a>; dolls in general <a href="#">A63H</a>)}</b>
U	<b>A47F 13/00</b>	<b>Shop or like accessories (devices for drawing-off and cutting paper from a roll <a href="#">B65H</a>; movably-mounted ladders <a href="#">E06C 9/06</a>)</b>
	<b>A47F 13/08</b>	• Hand implements, e.g. grocers` scoops, ladles, paper-bag holders

**Project: N/A (A47G)**

- U A47G 11/00 Table linen {(picnic blankets [A47G 9/06](#); placemats [A47G 23/0303](#))}
- U A47G 11/001 • {Table napkins}
- A47G 11/002 • • {comprising means for attaching to a ~~diner's~~ *diner's* clothing (separate holding devices [A47G 21/165](#))}

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

- A47J 37/00 **Baking; Roasting; Grilling; Frying (~~bakers' ovens, non-domestic baking apparatus or equipment A21B~~; *bakers' ovens, non-domestic baking apparatus or equipment A21B*; domestic stoves or ranges [F24B](#), [F24C](#))**
- A47J 37/01 • Vessels uniquely adapted for baking (~~for use in baker's ovens A21B~~ *for use in baker's ovens A21B*)

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

- A61B **DIAGNOSIS; SURGERY; IDENTIFICATION (analysing biological material [G01N](#), e.g. [G01N 33/48](#); obtaining records using waves other than optical waves, in general [G03B 42/00](#))**

**NOTE**

This subclass covers instruments, implements and processes for diagnostic, surgical and person-identification purposes, including obstetrics, instruments for cutting corns, vaccination instruments, finger-printing, psycho-physical tests.

**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:

<del>A61B 5/0295</del> <i>A61B 5/0295</i>	covered by	<a href="#">A61B 5/026</a>
<del>A61B 5/151</del> <i>A61B 5/151</i>	covered by	<a href="#">A61B 5/1411</a>
<del>A61B 5/153</del> <i>A61B 5/153</i>	covered by	<a href="#">A61B 5/1405</a>
<del>A61B 5/154</del> <i>A61B 5/154</i>	covered by	<a href="#">A61B 5/1438</a>
<del>A61B 5/157</del> <i>A61B 5/157</i>	covered by	<a href="#">A61B 5/00</a>

and s. gr.

<a href="#">A61B 17/03</a>	covered by	<a href="#">A61B 17/00</a>
<a href="#">A61B 17/125</a>	covered by	<a href="#">A61B 17/122</a>
<a href="#">A61B 17/138</a>	covered by	<a href="#">A61B 17/12</a>
<a href="#">A61B 17/76</a>	covered by	<a href="#">A61B 17/744</a>
<a href="#">A61B 17/78</a>	covered by	<a href="#">A61B 17/744</a>
<a href="#">A61B 17/90</a>	covered by	<a href="#">A61B 17/88</a>
<a href="#">A61B 17/94</a>	covered by	<a href="#">A61B 17/29</a>

- U A61B 1/00 **Instruments for performing medical examinations of the interior of cavities or tubes of the body by visual or photographic inspection, e.g. endoscopes (examination of body cavities or body tracts using ultrasonic, sonic or infrasonic waves [A61B 8/12](#); instruments, e.g. endoscopes, for taking a cell sample [A61B 10/00](#); endoscopic cutting instruments [A61B 17/32](#); surgical instruments using a laser beam being directed along or through a flexible conduit [A61B 18/22](#); technical endoscopes [G02B 23/24](#)); Illuminating arrangements therefor (for the eyes [A61B 3/00](#))**
- U A61B 1/24 • for the mouth, i.e. stomatoscopes, e.g. with tongue depressors (tongue depressors per se [A61B 13/00](#)); Instruments for opening or keeping open the mouth (combined with saliva removers [A61C 17/00](#); mouth openers for animals [A61D 15/00](#))
- A61B 1/247 • • with means for viewing areas outside the direct line of sight, e.g. dentists' mirrors



**U A61B 3/00** Apparatus for testing the eyes; Instruments for examining the eyes (eye inspection using ultrasonic, sonic or infrasonic waves [A61B 8/10](#); devices for treatment of the eyes [A61F 9/00](#); exercisers for the eyes [A61H 5/00](#); optical systems in general [G02B](#))

A61B 3/10 · Objective types, i.e. instruments for examining the eyes independent of the patients' perceptions or reactions

### Project: MP0123 (A61B)

**M 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 {(measuring or recording in general subclasses of [G01](#); medical informatics [G06F 19/30](#))}

#### WARNING

Groups A61B 5/40 – A61B 5/748 do not correspond to former or present IPC groups. Concordance CPC : IPC for these groups is as follows: A61B 5/40 : A61B 5/00A61B 5/41 : A61B 5/00A61B 5/42 : A61B 5/00A61B 5/43 : A61B 5/00A61B 5/44 : A61B 5/00A61B 5/45 : A61B 5/00A61B 5/48 : A61B 5/00A61B 5/68 : A61B 5/00A61B 5/70 : A61B 5/00A61B 5/72 : A61B 5/00A61B 5/74 : A61B 5/00

### Project: MP0124 (A61B)

**U A61B 5/01** · Measuring temperature of body parts; {Diagnostic temperature sensing, e.g. for malignant or inflamed tissue}(clinical thermometers [G01K 5/22](#); thermometers for special purposes [G01K 13/00](#))

**M A61B 5/015** · · {By temperature mapping of body parts~~part~~}

### Project: N/A (A61B)

**U A61B 5/02** · Detecting, measuring or recording pulse, heart rate, blood pressure or blood flow; Combined pulse/heart-rate/blood pressure determination; Evaluating a cardiovascular condition not otherwise provided for, e.g. using combinations of techniques provided for in this group with electrocardiography or electroauscultation; Heart catheters for measuring blood pressure

**U A61B 5/021** · · Measuring pressure in heart or blood vessels ([A61B 5/0205](#) takes precedence)

**U A61B 5/022** · · · by applying pressure to close blood vessels, e.g. against the skin; Ophthalmodynamometers

A61B 5/02208 · · · · {using the Korotkoff method}

A61B 5/02225 · · · · {using the oscillometric method}

**U A61B 5/44** · {Detecting, measuring or recording for evaluating the integumentary system, e.g. skin, hair or nails ([A61B 5/117](#) takes precedence)}

**U A61B 5/441** · · {Skin evaluation, e.g. for skin disorder diagnosis}

A61B 5/447 · · · {specially adapted for aiding the prevention of ulcer or pressure sore development, i.e. before the ulcer or sore has developed}

**U A61B 5/72** · {Signal processing specially adapted for physiological signals or for diagnostic purposes (algorithms for computer assisted diagnosis [G06F 19/34](#); pattern recognition [G06K 9/00](#))}

**U A61B 5/7271** · · {Specific aspects of physiological measurement analysis ([A61B 5/04012](#), [A61B 5/0452](#) and [A61B 5/048](#) take precedence)}

A61B 5/7296

- • • {for compensation of signal variation due to stress unintentionally induced in the patient, e.g. due to the stress of the medical environment or examination (deliberately inducing physiological or psychological stress [A61B 5/4884](#))}

**Project: MP0123 (A61B)****M 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](#))

**WARNING**

Groups A61B 6/40 to A61B 6/58 do not correspond to former or current IPC groups. Concordance CPC - IPC for these groups is as follows: - A61B 6/40 : A61B 6/00 - A61B 6/42 : A61B 6/00 - A61B 6/44 : A61B 6/00 - A61B 6/46 : A61B 6/00 - A61B 6/48 : A61B 6/00 - A61B 6/50 : A61B 6/00 - A61B 6/52 : A61B 6/00 - A61B 6/54 : A61B 6/00 - A61B 6/56 : A61B 6/00 - A61B 6/58 : A61B 6/00

**M A61B 8/00**

Diagnosis using ultrasonic, sonic or infrasonic waves (imaging of objects using sonar [G01S 15/00](#))

**WARNING**

Groups A61B 8/40 - A61B 8/58 do not correspond to former or current IPC groups. Concordance CPC : IPC groups is as follows: - A61B 8/40 - A61B 8/4444 : A61B 8/00 - A61B 8/445 : A61B 8/12 - A61B 8/4455 - A61B 8/46 : A61B 8/00 - A61B 8/48 - A61B 8/52 : A61B 8/08 - A61B 8/54 - A61B 8/58 : A61B 8/00

**Project: N/A (A61B)****U A61B 17/00**

Surgical instruments, devices or methods, e.g. tourniquets ([A61B 18/00](#) takes precedence; contraceptive devices, pessaries, or applicators therefor [A61F 6/00](#); eye surgery [A61F 9/007](#); ear surgery [A61F 11/00](#))

U A61B 17/04

- for suturing wounds; Holders or packages for needles or suture materials (suture materials [A61L 17/00](#))

A61B 17/0493

- • {Protective devices for suturing, i.e. for protecting the ~~patient's~~ *patient's* organs or the operator}

U A61B 17/068

- {Surgical staplers, e.g. containing multiple staples or clamps}{staplers containing only one staple [A61B 17/10](#); magazines or containers for staples [A61B 17/105](#); for performing anastomosis [A61B 17/115](#); {staplers in general [B25C 5/00](#))}

U A61B 17/072

- • for applying a row of staples in a single action, [e.g. the staples being applied simultaneously]

A61B 17/07292

- • • {Reinforcements for staple line, e.g. pledgets}

U A61B 17/11

- for performing anastomosis; Buttons for anastomosis

U A61B 17/115

- • Staplers {for performing anastomosis in a single operation}

A61B 17/1155

- • • {Circular staplers comprising a plurality of staples}

U A61B 17/22

- Implements for squeezing-off ulcers or the like on {the inside of} inner organs of the body; Implements for scraping-out cavities of body organs, e.g. bones; Calculus removers; Calculus smashing apparatus; {Apparatus for removing obstructions in blood vessels, not otherwise provided for (dilators [A61M 29/00](#))}

- U A61B 17/22004 • • {using mechanical vibrations, e.g. ultrasonic shock waves ([A61B 17/225](#) takes precedence)}
- U A61B 17/22012 • • • {in direct contact with, or very close to, the obstruction or concrement (for removing obstructions in blood vessels by laser [A61B 18/245](#))}
- A61B 2017/22014 • • • {the ultrasound transducer being outside ~~patient's~~ *patient's* body; with an ultrasound transmission member; with a wave guide; with a vibrated guide wire (not applied in [A61B 17/22012](#))}
- A61B 17/2202 • • • {the ultrasound transducer being inside ~~patient's~~ *patient's* body at the distal end of the catheter}
- A61B 17/54 • Chiropodists' instruments, {e.g. pedicure (chiropractic devices [A61H 1/008](#))}
- U A61B 18/00 **Surgical instruments, devices or methods for transferring non-mechanical forms of energy to or from the body (eye surgery [A61F 9/007](#); ear surgery [A61F 11/00](#))**
- U A61B 18/18 • by applying electromagnetic radiation, e.g. microwaves (radiation therapy [A61N 5/00](#))
- A61B 18/1815 • • {using microwaves}

**Project: MP0123 (A61B)**

- M A61B 19/00 Instruments, implements or accessories for surgery or diagnosis not covered by any of the groups [A61B 1/00](#) to [A61B 17/00](#), e.g. for stereotaxis, sterile operation, luxation treatment, wound edge protectors (~~{surgeon's or patient's gowns or dresses, surgical masks [A41D 13/00](#)}~~; *{surgeon's or patient's gowns or dresses, surgical masks [A41D 13/00](#)}*; devices for carrying-off, for treatment of, or for carrying-over, body liquids [A61M 1/00](#))

**WARNING**

Groups A61B 19/20 – A61B 19/56 do not correspond to former or current IPC groups.

Concordance CPC : IPC for these groups is as follows: – A61B 19/20 – A61B 19/56 : A61B 19/00

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

- A61B 19/02 • Protective casings or covers for appliances or instruments, e.g. boxes or sterile covers; Instrument tables or cupboards; Doctors' bags {(cleaning devices for surgical instruments [A61B 19/34](#); instrument-protective drapes [A61B 19/081](#); for sterilising articles [A61L 2/00](#); for cleaning for sterilising hypodermic or infusion needles or syringes [A61M 5/001](#); for preservation of living parts of the human or animal body [A01N 1/02](#))}
- U A61B 19/026 • • {Casings for packaging, protecting or dispensing articles (for endoscopes [A61B 1/00142](#); for test samples [A61B 10/0096](#); for sutures [A61B 17/06114](#); for ligaturing clips [A61B 17/1222](#); for gloves or finger-stalls [A61B 19/045](#); for dental floss [A61C 15/043](#); for dental instruments [A61C 19/02](#); for prostheses [A61F 2/0095](#); for contraceptive devices [A61F 6/005](#); for bandages or the like [A61F 15/001](#); for pharmaceutical products [A61J 1/00](#); for catheters [A61M 25/002](#); in general [B65D](#), e.g. with dispensing means [B65D 83/00](#); for ampoules [B65D 85/42](#); for clinical thermometers [G01K 1/083](#); for optical fibres [G02B 6/444](#); for X-ray films [G03C 3/003](#))}
- U A61B 19/0264 • • • {Carrying bags, cases, trusses (bags for midwives [A61B 17/48](#); bags in general [A45C](#); first-aid kits [A61F 17/00](#))}
- A61B 19/0266 • • • {Doctors' or nurses' bags}
- A61B 2019/028 • • • {carried on the medical ~~practitioner's~~ *practitioner's* clothing or back}
- U A61B 19/26 • {Supports as part of surgical instruments, e.g. articulated arms, headbands ([A61B 19/22](#) takes precedence; holders for articles [A61B 19/0256](#))}

- A61B 2019/261      • • {connected to ~~doctor's~~[doctor's](#) body, e.g. by a belt}
- A61B 19/36      • {Implements for cleaning or washing ~~surgeon's~~[surgeon's](#) hands or ~~patient's~~[patient's](#) skin (hand-held absorbent pads or swabs containing a cleaning liquid, e.g. in a rupturable reservoir, [A61M 35/006](#))}

**Project: MP0124 (A61C)**

- U    A61C 1/00      Dental machines for boring or cutting; {General features of dental machines or apparatus, e.g. hand-piece design}**
- U    A61C 1/08      • Machine parts specially adapted for dentistry
- M    A61C 1/088      • • {Illuminating devices or attachments (for examination of the mouth [A61B 1/24](#) and [A61B 1/06](#))}

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

- U    A61C 3/00      Dental tools or instruments (implanting tools [A61C 8/00](#); tools for fastening artificial teeth [A61C 13/12](#); visual inspection devices, e.g. dental mirrors, [A61B 1/24](#))**
- A61C 3/14      • Dentists' ~~forceps~~ forceps or the like for extracting teeth
- A61C 3/16      • Dentists' ~~forceps~~ forceps {or clamps} for removing crowns
- U    A61C 13/00      Dental prostheses; Making same (tooth crowns for capping teeth [A61C 5/08](#); dental implants [A61C 8/00](#))**
- U    A61C 13/01      • Palates or other bases or supports for the artificial teeth; Making same
- A61C 13/04      • • {made by casting}

**Project: N/A (A61D)**

- U    A61D 1/00      Surgical instruments for veterinary use**
- A61D 1/12      • Instruments for removing foreign bodies from animals' ~~throats~~ throats, oesophagus, or stomachs (instruments for removing foreign bodies from the human body [A61B 17/50](#))
- A61D 1/14      • Devices for degassing animals' ~~stomachs~~ stomachs
- A61D 5/00      Instruments for treating animals' ~~teeth~~ teeth**

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

**A61F      FILTERS IMPLANTABLE INTO BLOOD VESSELS; PROSTHESES; DEVICES PROVIDING PATENCY TO, OR PREVENTING COLLAPSING OF, TUBULAR STRUCTURES OF THE BODY, E.G. STENTS; ORTHOPAEDIC, NURSING OR CONTRACEPTIVE DEVICES; FOMENTATION; TREATMENT OR PROTECTION OF EYES OR EARS; BANDAGES, DRESSINGS OR ABSORBENT PADS; FIRST-AID KITS (dental prosthetics [A61C](#))**

WARNING

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

- [A61F 2/48](#) covered by [A61F 2/02](#)
- [A61F 2/56](#) covered by [A61F 2/54](#)
- [A61F 2/62](#) covered by [A61F 2/60](#)
- ~~A61F 2/70~~[A61F 2/70](#) covered by [A61F 2/68](#), [A61F 2/72](#)
- [A61F 2/74](#) covered by [A61F 2/68](#)
- [A61F 5/045](#) covered by [A61G 13/12](#)
- [A61F 5/052](#) covered by [A61F 5/05](#)
- [A61F 5/447](#) covered by [A61F 5/445](#)
- [A61F 5/452](#) covered by [A61F 5/451](#)

A61F 5/457 covered by [A61F 5/451](#)  
A61F 5/458 covered by [A61F 5/451](#)  
A61F 6/10 covered by [A61F 6/08](#)  
A61F 9/01 covered by [A61F 9/00802](#)–[A61F 9/00825](#)  
A61F 9/011 covered by [A61F 9/00802](#)–[A61F 9/00825](#)  
A61F 13/22 covered by [A61F 13/206](#)  
A61F 13/24 covered by [A61F 13/2037](#)  
A61F 13/30 covered by [A61F 13/26](#)  
A61F 13/32 covered by [A61F 13/26](#)  
A61F 13/40 covered by [A61M 35/006](#)

## U A61F 9/00

**Method or devices for treatment of the eyes; Devices for putting-in contact lenses; Devices to correct squinting; Apparatus to guide the blind; Protective devices for the eyes, carried on the body or in the hand (caps with means for protecting the eyes [A42B 1/06](#); visors for helmets [A42B 3/22](#); {retractors [A61B 17/02](#); manipulators specially adapted for use in surgery [A61B 19/22](#)}; appliances to aid invalids to move about [A61H 3/00](#); {exercisers for the eyes [A61H 5/00](#)}; eye baths [A61H 35/02](#); sunglasses or goggles having the same features as spectacles [G02C](#))**

- A61F 2009/0035 · {Devices for immobilising a ~~patient's~~*patient's* head with respect to the instrument}
- A61F 2009/0043 · · {by supporting the instrument on the ~~patient's~~*patient's* head, e.g. head bands}
- A61F 2009/0052 · · · {the instrument being supported on the ~~patient's~~*patient's* eye}

## U A61F 11/00

**Methods or devices for treatment of the ears, e.g. surgical; Protective devices for the ears, carried on the body or in the hand; {Non-electric hearing aids}**

- U A61F 11/06 · Protective devices for the ears
- A61F 11/14 · · external, e.g. earcaps or earmuffs (headwear, e.g. caps or helmets, with means for protecting the ears [A42B 1/06](#), [A42B 3/16](#), {for ~~hairstylist's~~*hairstylist's* rooms [A45D 44/12](#); for sports [A63B 71/10](#); headphones [H04R 1/10](#)})

### NOTE

Group [A61F 11/14](#) contains only acoustic protection (other external protectors, see [A61F 11/06](#))

## U A61F 13/00

**Bandages or dressings (suspensory bandages [A61F 5/40](#); {contact-avoiding wound protectors [A61F 15/008](#); bandages or dressings with incorporated medicaments [A61L 15/44](#), [A61M 35/006](#); radioactive dressings [A61N 5/1029](#)}); Absorbent pads (chemical aspects of, or use of materials for, bandages, dressings or absorbent pads [A61L 15/00](#); {absorbent pads for tracheostomy [A61M 16/047](#)})**

- U A61F 2013/00361 · {Plasters}
- U A61F 2013/00365 · · {use}
- U A61F 2013/0048 · · · {for toes (for red nails, in-grown nails or felons [A61F 2013/00353](#))}
- A61F 2013/00485 · · · · {treating of ~~athlete's~~*athlete's* foot}
- U A61F 13/15 · Absorbent pads, e.g. sanitary towels, swabs or tampons for external or internal application to the body (non-absorbent catamenial receptacles [A61F](#)); Supporting or fastening means therefor; Tampon applicators
- U A61F 13/15577 · · {Apparatus or processes for manufacturing}
- A61F 13/15585 · · · {of babies'  napkins, e.g. diapers ([A61F 13/15617](#) to [A61F 13/15804](#) take precedence)}

- U A61F 13/51      • • characterised by the outer layers {(wicking or transfer layers [A61F 13/537](#))}
- A61F 13/52      • • • {Layers coated or treated to decrease absorbency}

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

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

WARNING

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

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

**Project: MP0124 (A61G)**

- U A61G 7/00      **Beds specially adapted for nursing; Devices for lifting patients or disabled persons (equipment for beds, treatment tables, floor frames or the like for extending or stretching [A61F5/045](#) {takes precedence} ; stretchers with facilities for picking up patients or disabled persons [A61G 1/003](#))**
- M A61G 7/047      • Beds for special sanitary purposes; {, e.g. for giving enemas, irrigations, flushings ([A61G 7/02](#) takes precedence; means for bathing bed-ridden persons [A61G 7/0005](#))}

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

- U A61G 13/00      **Operating tables; Auxiliary appliances therefor (illumination of operating tables [F21L](#), [F21S](#) or [F21V](#) {adjustability of tables in general [A47B 9/00](#); tables for radiation diagnosis [A61B 6/04](#), drainage or irrigation pans, bags, or attachments [A61G 7/02](#), [A61G 7/0503](#))}**
- A61G 13/0018      • {~~Physician`s~~ [Physician's](#) examining tables}
- A61G 15/00      **Operating chairs; Dental chairs (~~barbers` chairs~~ [A47C 1/04](#) [barbers' chairs](#) [A47C 1/04](#)); Accessories specially adapted therefor, e.g. work stands**

**Project: MP0124 (A61H)**

- U A61H 1/00      **Apparatus for passive exercising ([A61H 5/00](#) takes precedence); Vibrating apparatus {(driving means for vibrating [A61H 23/00](#))}; Chiropractic devices, e.g. body impacting devices, external devices for briefly extending or aligning unbroken bones**
- NOTE
- This group does not cover orthopaedic methods or devices, which are covered by group [A61F 5/00](#)
- M A61H 1/005      • {Moveable [platform](#), e.g. vibrating or oscillating; platform for standing, sitting, laying, leaning ~~or kneeling~~}



- U A61H 7/00 Devices for suction-kneading massage; Devices for massaging the skin by rubbing or brushing not otherwise provided for (Electro-medical massage devices applying electric current by contact [A61N 1/18](#) {Brushes in general [A46](#); Bathing sponges, brushes, gloves or similar cleaning or rubbing implements not specially for massage [A47K 7/02](#); Suction devices for nursing [A61M 1/06](#), [A61M 1/08](#); Rollers or balls therefore, [A61H 15/00](#)})
- U A61H 7/007 · {Kneading}
- M A61H 2007/009 · · {having massage elements ~~mounted~~*rotating* on parallel output axis ~~turning in opposite sense~~}

## Project: MP0123 (A61H)

- M A61H 19/00 Massage for the genitals; {Devices for improving sexual intercourse (penis erection devices [A61F 5/41](#); vibration or percussion related aspects [A61H 23/00](#))}

**WARNING**

Groups A61H 19/30 to A61H 19/50 do not correspond to former or current IPC groups. Concordance CPC:IPC for these groups is as follows: A61H 19/30 to A61H 19/50: A61H 19/00

## Project: N/A (A61H)

- A61H 39/00 Devices for locating or stimulating specific reflex points of the body for physical therapy, e.g. acupuncture (~~chiroprodists' instruments~~ [A61B 17/54](#); *chiroprodists' instruments* [A61B 17/54](#); {for radiation therapy [A61N 5/0619](#)})

## Project: MP0124 (A61H)

- U A61H 2230/00 Measuring physical parameters of the user
- M A61H 2230/65 · Impedance, e.g. skin conductivity, ~~capacitance~~; *capacitance, e.g. galvanic skin response [GSR]*

## Project: N/A (A61K)

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

**NOTES**

1. Groups [A61K 39/002](#) to [A61K 39/295](#) cover preparations containing protozoa, bacteria, viruses, or subunits thereof, e.g. membrane parts.
2. Preparation of antigen or antibody compositions is also classified in subclass [C12N](#), if the step of cultivating the micro-organism is of interest.
3. Documents relating to new peptides, e.g. enzymes, or new DNA or RNA encoding for peptides and their use in medicinal preparations are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes relating to their medical uses.
4. Documents relating to antibodies or DNA or RNA encoding for antibodies and their use in medicinal preparations are classified in group [C07K 16/00](#) or in group [C12N 9/0002](#) according to the antibodies, with the appropriate indexing codes relating to their medical uses.
5. Documents relating to new therapeutical uses of antibodies or DNA or RNA encoding for antibodies are classified in group [C07K 16/00](#) or in group [C12N 9/0002](#) according to the antibodies, with the appropriate indexing codes relating to their medical uses.
6. Documents relating to medicinal preparations containing different antibodies as active ingredients are classified in group [C07K 16/00](#) according to the different active antibodies, with the appropriate indexing codes relating to their

medical uses. However, documents relating to medicinal preparations containing antibodies and other compounds as active ingredients are classified in groups [A61K 39/395](#) to [A61K 39/42](#), in association with symbol [A61K 2300/00](#) in Combination Sets.

- U A61K 39/12                   · Viral antigens
- U A61K 39/245               · · Herpetoviridae, e.g. herpes simplex virus
- A61K 39/255               · · · ~~Marek's~~ *Marek's* disease virus
- U A61K 45/00               Medicinal preparations containing active ingredients not provided for in groups [A61K 31/00](#) to [A61K 41/00](#)**
- A61K 45/05               · {Immunological preparations stimulating the reticulo-endothelial system, e.g. against cancer}

- U A61K 48/00               Medicinal preparations containing genetic material which is inserted into cells of the living body to treat genetic diseases; Gene therapy**

#### NOTES

1. In this group the following expression is used with the meaning indicated:  
"gene therapy" means in vivo delivery of nucleic acids encoding for peptides by administration of these nucleic acids or by implanting cells transfected ex vivo with the nucleic acids encoding for the peptides.
2. Documents relating to new nucleic acids encoding for peptides, e.g. enzymes, and their use in gene therapy are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the encoded peptides, with the appropriate indexing codes relating to gene therapy.
3. Documents relating to new vectors and their use in gene therapy are classified in groups [C12N 15/85](#) - [C12N 15/90](#) according to the vectors, and the appropriate indexing codes, including those relating to gene therapy.
4. Documents describing cells genetically modified to express a gene of interest and their use in gene therapy are classified in [C12N 5/06](#) according to the cells, with the appropriate indexing codes relating to gene therapy.
5. Documents relating to new medical uses of peptides per se, which peptides may be encoded by nucleic acids, and wherein the nucleic acids may be administered directly or by implanting cells transfected ex vivo with the nucleic acids, are classified in the appropriate groups [A61K 38/00](#) or [A61K 39/00](#) according to the encoded peptides, with the indexing codes relating, inter alia, to gene therapy.

- A61K 48/0008           · {characterised by an aspect of the ~~non-active~~ part of the composition delivered, e.g. wherein such ~~non-active~~ part is not delivered simultaneously with the ~~active~~ part of the composition}
- A61K 48/0016           · · {wherein the nucleic acid is delivered as a ~~naked~~ nucleic acid, i.e. not combined with an entity such as a cationic lipid}
- A61K 48/005            · {characterised by an aspect of the ~~active~~ part of the composition delivered, i.e. the nucleic acid delivered}

- U A61K 49/00               Preparations for testing in vivo**
- U A61K 49/001            · {Preparation for luminescence or biological staining}
- U A61K 49/0013           · · {Luminescence}
- U A61K 49/0017           · · · {Fluorescence in vivo}
- U A61K 49/0019           · · · · {characterised by the fluorescent group}

- U A61K 49/0021 . . . . {the fluorescent group being a small organic molecule (oligomeric, polymeric, dendritic molecules: [A61K 49/0019](#))}
- NOTE  
if this fluorescent group is complexed or covalently linked to a carrier, classification is also made according to the nature of the carrier in the appropriate [A61K 49/005](#) subgroup
- U A61K 49/0032 . . . . . {Methine dyes, e.g. cyanine dyes}
- A61K 49/0034 . . . . . {Indocyanine green, i.e. ICG, cardiogreen ~~ÜC1206~~}

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

- U A61M 3/00 **Medical syringes, e.g. enemata; Irrigators ([A61M 5/00](#) takes precedence; pistons [A61M 5/315](#))**
- WARNING  
Groups [A61M 3/0204](#) - [A61M 3/022](#) are incomplete pending reclassification of documents from group [A61M 3/02](#).
- Until reclassification is complete, groups [A61M 3/02](#) and [A61M 3/0204](#) - [A61M 3/022](#) should be considered to perform a complete search.
- U A61M 3/02 . Enemata; Irrigators
- A61M 3/0225 . . {Devices on which the patient can sit, e.g. mounted on a toilet bowl (combined with bidets [A61M 3/06](#)); Devices containing liquid pumped by the ~~patient's~~*patient's* weight}
- U A61M 3/0233 . . {characterised by liquid supply means, e.g. from pressurised reservoirs}
- A61M 3/0254 . . . {the liquid being pumped (~~by the patient's weight~~ [A61M 3/0225](#)*by the patient's weight* [A61M 3/0225](#))}
- U A61M 5/00 **Devices for bringing media into the body in a subcutaneous, intra-vascular or intramuscular way; Accessories therefor, e.g. filling or cleaning devices, arm-rests ({vaccination appliances for veterinary use [A61D 1/025](#)}; tube connectors, tube couplings, valves or branch units specially adapted for medical use [A61M 39/00](#); containers specially adapted for medical or pharmaceutical purposes [A61J 1/00](#); {combinations of vial and syringe for mixing or transferring their contents [A61J 1/20](#); holders for containers for collecting, storing or administering blood or medical fluids [A61J 1/16](#))}**
- U A61M 5/178 . Syringes
- U A61M 5/30 . . Syringes for injection by jet action, without needle, e.g. for use with replaceable ampoules or carpules
- A61M 5/3007 . . . {with specially designed jet passages at the ~~injector's~~*injector's* distal end}

**Project: MP0124 (A61M)**

- U A61M 5/31 . . Details
- U A61M 5/32 . . . Needles; Details of needles pertaining to their connection with syringe or hub (infusion needles [A61M 5/158](#)); Accessories for bringing the needle into, or holding the needle on, the body {([A61M 5/42](#), [A61M 5/46](#) take precedence; guide needles for catheters [A61M 25/065](#)); Devices for protection of needles {(apparatus specially adapted for cleaning or sterilising needles [A61M 5/001](#))}

- U A61M 5/3205 . . . {Apparatus for removing or disposing of used needles or syringes, e.g. containers; Means for protection against accidental injuries from used needles (for sharps [A61B 19/0288](#); disintegrating apparatus in general [B02C](#), e.g. [B02C 19/0075](#), [B23H 9/001](#); disposal of medical waste in general [B09B 3/0075](#); receptacles for refuse disposal in general [B65F 1/00](#))}
- U A61M 5/321 . . . . {Means for protection against accidental injuries by used needles}
- U A61M 5/3243 . . . . . {being axially-extensible, e.g. protective sleeves coaxially slidable on the syringe barrel (devices for protecting guide needles in combination with catheters [A61M 25/0612](#))}
- U A61M 5/3257 . . . . . {Semi-automatic sleeve extension, i.e. in which the triggering of the sleeve extension requires a deliberate action by the user, e.g. manual release of spring-biased extension means}
- M A61M 5/326 . . . . . {Fully automatic, i.e. in which the triggering does not require *a deliberate action by the user*}

## Project: MP0123 (A61M)

- M A61M 19/00 Local anaesthesia (syringes therefor [A61M 5/00](#)); Hypothermia ([A61M 5/42](#) takes precedence; cooling blood in a bypass of the arterial system [A61M 1/36](#))

**WARNING**

Groups ~~A61B 19/20~~ - ~~A61B 19/56~~ do not correspond to former or current IPC groups.  
 Concordance CPC : IPC for these groups is as follows: - ~~A61B 19/20~~ - ~~A61B 19/56~~ : ~~A61B 19/00~~ }

## Project: N/A (A61M)

- U A61M 2205/00 General characteristics of the apparatus
- U A61M 2205/35 . Communication
  - U A61M 2205/3546 . . Range
  - A61M 2205/3553 . . . remote, e.g. between *patient's* home and *doctor's* office

## Project: N/A (A62B)

## A62B

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

- U A62B 17/00 Protective clothing affording protection against heat or harmful chemical agents or for use at high altitudes (protective clothing for work or sport [A41D 13/00](#), {e.g. overalls [A41D 13/02](#), surgical gowns [A41D 13/12](#); materials for protecting clothing [A41D 31/0011](#)}; protecting eyes or ears [A61F 9/00](#); composition of materials for protective clothing [A62D 5/00](#); life-saving garments for use at sea [B63C](#); diving suits [B63C 11/02](#); flying suits, {anti-g suits} [B64D 10/00](#); space suits [B64G 6/00](#); bullet-proof clothing [F41H 1/02](#))
- A62B 17/003 . {Fire-resistant or fire-fighters' clothes}

**A62B 35/00**

Safety belts or body harnesses; Similar equipment for limiting displacement of the human body, especially in case of sudden changes of motion (buckles [A44B 11/00](#); ~~accessories for children's furniture~~ [A47D 15/00](#); ~~children's seats~~ [B60N 2/24](#); ~~accessories for children's furniture~~ [A47D 15/00](#); ~~children's seats~~ [B60N 2/24](#); safety belts or body harnesses for land vehicles [B60R 22/00](#); harnesses for parachutes [B64D 17/30](#); harnessing in aircraft [B64D 25/06](#); releasable fastenings [F16B](#))

**Project: N/A (A62C)****U A62C 31/00**

Delivery of fire-extinguishing material (pumps [F04](#); {suction or pressure} hoses, {joints or couplings therefor} [F16L](#))

## A62C 31/005

- {using nozzles ~~(see warning after subclass title)~~}

WARNING

*see warning after subclass title*

**U A62C 35/00**

Permanently-installed equipment ([A62C 31/00](#), [A62C 33/00](#), [A62C 37/00](#) take precedence; for forming water curtains [A62C 2/08](#))

## U A62C 35/58

- Pipe-line systems

## U A62C 35/60

- • wet, i.e. containing extinguishing material even when not in use

## A62C 35/605

- • • {operating and sounding alarm automatically ~~(see warning after subclass title)~~}

WARNING

*see warning after subclass title*

## U A62C 35/64

- • pressurised

## A62C 35/645

- • • {with compressed gas in pipework ~~(see warning after subclass title)~~}

WARNING

*see warning after subclass title*

**Project: RP0077, RP0117 (A63B)****M A63B**

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

WARNING

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

[A63B 7/06](#)

covered by

[A63G 1/00](#)

~~[A63B 21/075](#)~~[A63B 21/075](#)

covered by

[A63B 21/072](#)

~~[A63B 21/08](#)~~

~~covered by~~

~~[A63B 21/06](#)~~

~~[A63B 22/08](#)~~

~~covered by~~

~~[A63B 22/0605](#)~~

~~in~~

~~absence of~~

~~[A63B 22/0002](#)~~

~~[A63B 22/10](#)~~

covered by

[A63B 22/0605](#)

in

combination with

[A63B 22/0002](#)

[A63B 22/12](#)

covered by

[A63B 22/0605](#)

in

combination with

[A63B 22/001](#)

[A63B 29/04](#)

covered by

[A63B 29/00](#)

[A63B 31/16](#)

covered by

[A63B 31/14](#)

<del>A63B 49/06</del>	covered by	<del>A63B 49/02</del>
<del>A63B 51/16</del>	covered by	<del>A63B 51/14</del>
<del>A63B 55/06</del>	covered by	<del>A63B 55/04</del>
<del>- A63B 31/18</del>	A63B 63/02	covered by
<a href="#">A63B 63/00</a>		
<a href="#">A63B 63/04</a>	covered by	<a href="#">A63B 63/00</a>
<a href="#">A63B 69/22</a>	covered by	<a href="#">A63B 69/20</a>
<a href="#">A63B 69/28</a>	covered by	<a href="#">A63B 69/20</a>
<a href="#">A63B 69/30</a>	covered by	<a href="#">A63B 69/20</a>
<a href="#">A63B 71/16</a>	covered by	<del>A63B 71/081</del>
<del>A63B 71/14</del> - <del>A63B 71/148</del>		

**Project: RP0117 (A63B)****M** A63B 15/00**Clubs *for gymnastics or the like* {, ~~f~~e.g. for swinging exercises}**WARNINGDocuments are being reclassified to [A63B 21/072](#)**C** A63B 15/005

- {with a weight movable along the longitudinal axis of the club due to centrifugal forces ~~(in tennis rackets A63B 59/0096)~~}

WARNING

*Group A63B 15/005 is impacted by reclassification into group A63B 60/04. Groups A63B 15/005 and A63B 60/04 should be considered in order to perform a complete search.*

**Project: RP0077 (A63B)****A63B 21/00**

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

NOTE

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

- "resistance" and "resistance force" are often used in the art as synonyms for "counterforce";
- "interface with the user" covers the part of the apparatus, on which the user directly applies his force

**Project: N/A (A63B)****D** A63B 21/00003

- {Special force transmissions therefor}

**D** A63B 21/00007

- {~~using flexible elements for reciprocating movements, e.g. ropes, chain (flexible ropes or chains for transmission between rotating axes or pulleys n.c.)~~}

**D** A63B 21/0001

- • {Bowden cables, i.e. wire within a protective casing, like a bike brake cable}

**D** A63B 21/00014

- • {~~wound up and unwound during exercise, e.g. from a reel, rewind reels B65H 75/00~~}

**D** A63B 21/00018

- • {using special pulley-assemblies}

**D** A63B 21/00021

- • • {cam-shaped pulleys or other non-uniform pulleys, e.g. conical}



- D A63B 21/00025 • • • {the position of one (or more) pulleys being variable (e.g. for different exercises)}
- D A63B 21/00029 • • {Ratchet-wheel links; overrunning clutches, one-way clutches}
- D A63B 21/00032 • • {using levers for transmitting forces}
- D A63B 21/00036 • • {Hydraulic transmission, hydraulic resistance A63B 21/0081}
- A63B 21/0004 • {~~Exercise device~~ *Exercising devices* moving as a whole during exercise; ~~bar bells and dumb bells (A63B 21/072 takes precedence, on wheels A63B 22/20 bar bells or dumb bells A63B 21/072; on wheels A63B 22/20)~~}

**Project: RP0077 (A63B)**

- A63B 21/00043 • • {~~exercise device~~ *Exercising devices* consisting of a pair of *user* interfaces ~~with the user~~ connected by flexible elements, e.g. two handles connected by elastic bands; ~~skipping ropes (A63B 5/20 takes precedence, resilient element A63B 21/02 skipping ropes A63B 5/20; resilient elements A63B 21/02)~~}

WARNING

not complete, pending the completion of a reclassification

**Project: N/A (A63B)**

- A63B 21/00047 • ~~Exercise device~~ {*Exercising devices* not moving during use; ~~benches (A63B 21/00087 takes precedence, isometric exercising A63B 21/0023, step exerciser A63B 23/0458 takes precedence, walk exerciser A63B 23/0464 takes precedence benches A63B 21/0029; isometric exercising devices A63B 21/0023; step exercisers A63B 23/0458; walk exercisers A63B 23/0464)~~}
- A63B 21/0005 • • {~~For~~ *pecially adapted for* head stands}
- A63B 21/00054 • • {~~For~~ *pecially adapted for* shoulder stands}

**Project: RP0077 (A63B)**

- A63B 21/00058 • • {Mechanical means for ~~variation of~~ *varying* the resistance (A63B 21/06 takes precedence)}

WARNING

not complete, pending the completion of a reclassification

- A63B 21/00061 • • {Replaceable resistance units of different strengths, e.g. for swapping}

WARNING

not complete, pending the completion of a reclassification

- A63B 21/00065 • • {~~Multiple individual resistance units of~~ *by increasing or reducing* the ~~same or different strengths, e.g. additional~~ *number of resistance units*}

WARNING

not complete, pending the completion of a reclassification

- A63B 21/00069 • • {*Setting or adjusting the resistance level*; ~~{Setting, adjusting the resistance level, or compensating~~ *Compensating* for a preload prior to use, e.g. changing length of resistance; *or* adjusting a valve}

WARNING

not complete, pending the completion of a reclassification

**Project: N/A (A63B)**

- A63B 21/00072 • • • {*By* *by* changing the length of a lever}

**Project: RP0077 (A63B)**

- A63B 21/00076      • {~~On~~on the fly, i.e. ~~varying~~ the resistance ~~being adjustable~~ during exercise}  
WARNING  
~~not complete, pending the completion of a reclassification~~

**Project: N/A (A63B)**

- D A63B 21/00079      • {details of the interface with the user related to strength training}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00083      • {kind of exercise interface; chairs and stools with exercising means A47C 9/002}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00087      • • {benches specifically designed for exercising; for bench press A63B 21/078}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/0009      • • • {with parts of the bench moving against a resistance during exercise}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00094      • • {handle, pedal, bar or platform}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00098      • • • {for manipulation by feet/foot}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00101      • • • {for manipulation by hand}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00105      • • {exercise mats with or without hand or foot grips for personal use, e.g. for Yoga or supine floor exercises; mats for absorbing shocks (A63B 6/00 takes precedence)}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00109      • • {contoured to fit to specific body parts; e.g. back, knee or neck support; attachment on user's body (A63B 21/00138 takes precedence); handles, pedals, bar or platform (A63B 21/00094 takes precedence)}  
WARNING  
~~not complete, pending the completion of a reclassification~~
- D A63B 21/00112      • {movement of the interface}  
WARNING  
~~not complete, pending the completion of a reclassification~~

- D A63B 21/00116 . . . {free movement, unrestricted apart from by the resistance (A63B 21/072 takes precedence; A63B 21/00043 takes precedence)}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/0012 . . . {reciprocating movement of the interface along (in/on) a guide, weights moving along or in guiding means A63B 21/06, for cardio-training A63B 22/201}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/00123 . . . {pivoting movement of the interface, weight pivoting A63B 21/08}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/00127 . . . {the interface rotating about an axis}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/0013 . . . {direct manipulation of the resistance, dumb bells, bar bells or the like (A63B 21/072 takes precedence)}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/00134 . . . {resisting device worn on the body; weights worn on user's body (A63B 21/065 takes precedence)}
- D A63B 21/00138 . . . {Attachments of exercising apparatus to the body of the user, e.g. using special belts, shoes or gloves, weights worn on user's body (A63B 21/065 takes precedence, exoskeletons B25J 9/0006)}
- D A63B 21/00141 . . . {to the head, neck}
- D A63B 21/00145 . . . {to the shoulder}
- D A63B 21/00149 . . . {to the chest region, including back}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/00152 . . . {to the waist}
- D A63B 21/00156 . . . {to the lower limbs, means for physically limiting movements of body parts A63B 69/0053}
- D A63B 21/0016 . . . . {to the ankle}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/00163 . . . . {to the feet}
- D A63B 21/00167 . . . {to the upper limbs}  
WARNING  
 not complete, pending the completion of a reclassification
- D A63B 21/0017 . . . . {to the wrist}  
WARNING  
 not complete, pending the completion of a reclassification, check A63B 21/00167

- D A63B 21/00174 . . . {to the hand}  
WARNING  
not complete, pending the completion of a reclassification, check  
A63B 21/00167
- A63B 21/00178 . {~~Apparatus~~ for active exercising ~~which can be used~~, *the apparatus being* also  
*usable* for passive exercising}
- A63B 21/00181 . {~~Apparatus~~ comprising additional means assisting the user to overcome part of  
the resisting force, i.e. assisted-active exercising}
- A63B 21/00185 . {~~Resistance force~~ *using resistance* provided by the user ~~himself~~, e.g. exercising  
one body part against a resistance provided by another body part ([A63B 21/068](#)  
takes precedence; isometric exercise [A63B 21/0023](#))}
- A63B 21/00189 . {~~Resistance~~ *using resistance* provided by *plastic* deformable materials ~~having~~  
~~no elasticity~~, e.g. lead bars; ~~or~~ kneadable masses (*resilient force-resistors*  
*made of material having high internal friction* [A63B 21/028](#))}
- A63B 21/00192 . {~~Resistance force~~ *using resistance* provided by magnetic means ([A63B 21/005](#)  
takes precedence)}
- A63B 21/00196 . {~~Pulsed counterforce~~; *{using pulsed counterforce,* e.g. vibrating resistance  
means ([A61H 1/005](#) takes precedence)}
- U A63B 21/002 . isometric or isokinetic, i.e. substantial force variation without substantial muscle  
motion {or wherein the speed of the motion is independent of the force applied  
by the user}
- A63B 21/0023 . . {~~Apparatus~~ for isometric exercising ~~only~~, *e.i.e. substantial force variation*  
without substantial ~~motion by substantial force application~~ *muscle motion*}
- D A63B 21/0026 . . {isokinetic exercising, i.e. the speed or the maximum speed being  
independent of the force applied by the user}
- U A63B 21/005 . using electromagnetic or electric force-resistors
- A63B 21/0051 . . {using eddy- currents induced in moved elements, e.g. by permanent  
magnets}
- A63B 21/0053 . . {using ~~an alternator~~ *alternators* or ~~a dynamo~~ *dynamos*}
- D A63B 21/0054 . . . {for charging a battery}
- N A63B 21/0054 . . . {for charging a battery}
- D A63B 21/0055 . . . {the produced electric power used as a source for other equipment, e.g.  
T.V.}
- N A63B 21/0055 . . . {the produced electric power used as a source for other equipment, e.g. for  
TVs}
- A63B 21/0058 . . {using ~~a motor~~ *motors*}
- D A63B 21/0059 . . . {using a frequency-controlled AC motor}
- N A63B 21/0059 . . . {using a frequency controlled AC motor}
- A63B 21/008 . using hydraulic or pneumatic force-resistors ~~{not used, see subgroups}~~
- D A63B 21/0081 . . {using hydraulic force-resistors}
- D A63B 21/0082 . . . {using electrorheological or magnetic-rheological fluids}
- A63B 21/0083 . . . {of the piston-cylinder type (~~shock absorbers in general~~ [F16F 9/00](#) *using*  
*pneumatic piston-cylinder type force resistors* [A63B 21/0087](#))}
- A63B 21/0084 . . . {by moving the ~~ambient~~ *surrounding* water ([A63B 31/00](#), [A63B 35/00](#) take  
precedence)}
- N A63B 21/00845 . . . {using electrorheological or magnetorheological fluids}
- U A63B 21/0085 . . {using pneumatic force-resistors}
- D A63B 21/0086 . . . {Suction cups}

	A63B 21/0087	<ul style="list-style-type: none"> <li>• • • {of the piston-cylinder type <i>(using hydraulic piston-cylinder type force resistors A63B 21/0083)</i>}</li> </ul>
	A63B 21/0088	<ul style="list-style-type: none"> <li>• • • {by moving the <i>ambient</i><del>surrounding</del> air}</li> </ul>
N	A63B 21/0089	<ul style="list-style-type: none"> <li>• • • {<i>Suction cups</i>}</li> </ul>
U	A63B 21/02	<ul style="list-style-type: none"> <li>• using resilient force-resisters</li> </ul>
D	A63B 2021/021	<ul style="list-style-type: none"> <li>• • {<del>Flip-flop, overcentre, toggle</del> systems}</li> </ul>
N	A63B 21/021	<ul style="list-style-type: none"> <li>• • {<i>whereby the resistance changes abruptly during the exercising movement, e.g. by using toggles</i>}</li> </ul>
D	A63B 2021/022	<ul style="list-style-type: none"> <li>• • {with different springs acting at different parts of the stroke}</li> </ul>
N	A63B 21/022	<ul style="list-style-type: none"> <li>• • {<i>with springs acting at different parts of the stroke</i>}</li> </ul>
	A63B 21/026	<ul style="list-style-type: none"> <li>• • {Bars; Tubes; <del>Leaves</del><i>Leaf springs</i> (A63B 21/023 takes precedence)}</li> </ul>
	A63B 21/028	<ul style="list-style-type: none"> <li>• • {made of material having high internal friction, e.g. rubber, <del>plastic</del>, steel wool, <del>used for compression</del><i>intended to be compressed (resistance provided by plastic deformable materials A63B 21/00189)</i>}</li> </ul>
	A63B 21/04	<ul style="list-style-type: none"> <li>• • attached to static foundation <i>{, e.g. a user}</i></li> </ul>
U	A63B 21/0407	<ul style="list-style-type: none"> <li>• • • {Anchored at two end points, e.g. installed within an apparatus}</li> </ul>
	A63B 21/0414	<ul style="list-style-type: none"> <li>• • • • {<del>With</del><i>with</i> both ends stationary during the actual exercise, i.e. <del>force applied</del><i>moving only</i> at <del>an</del> intermediate <del>location</del><i>locations</i>}</li> </ul>
	A63B 21/0421	<ul style="list-style-type: none"> <li>• • • • {<del>Ends</del><i>the ends</i> moving relatively by a pivoting arrangement}</li> </ul>
	A63B 21/0435	<ul style="list-style-type: none"> <li>• • • • {One or both ends <i>being</i> anchored to a rotating element}</li> </ul>
	A63B 21/0442	<ul style="list-style-type: none"> <li>• • • {Anchored at one end only, the other end <i>being</i> manipulated by the user}</li> </ul>
	A63B 21/045	<ul style="list-style-type: none"> <li>• • having torsion {or bending; <del>or</del> flexion} element</li> </ul>
U	A63B 21/055	<ul style="list-style-type: none"> <li>• extension element type</li> </ul>
U	A63B 21/0552	<ul style="list-style-type: none"> <li>• • • {Elastic ropes or bands}</li> </ul>
	A63B 21/0555	<ul style="list-style-type: none"> <li>• • • • {Details of the rope or band <del>itself</del>, e.g. <del>form, construction, shape</del> <i>or</i> colour coding, <del>protection coating</del>}</li> </ul>
	A63B 21/0557	<ul style="list-style-type: none"> <li>• • • • {Details of attachments, e.g. <del>to other parts, i.e. clips</del>, <i>clips or</i> clamps}</li> </ul>
U	A63B 21/06	<ul style="list-style-type: none"> <li>• User-manipulated weights</li> </ul>
U	A63B 21/0601	<ul style="list-style-type: none"> <li>• • {Special physical structures of used masses}</li> </ul>
	A63B 21/0603	<ul style="list-style-type: none"> <li>• • • {Fluid-like particles, e.g. gun shot; <del>or</del> sand}</li> </ul>
	A63B 21/0604	<ul style="list-style-type: none"> <li>• • • • {<del>Aggregate</del><i>Solid masses</i>, e.g. concrete (A63B 21/0603 takes precedence)}</li> </ul>
	A63B 21/0605	<ul style="list-style-type: none"> <li>• • • • {<del>With</del><i>with</i> boxes, baskets or the like for stacking loose weights therein}</li> </ul>
	A63B 21/0607	<ul style="list-style-type: none"> <li>• • • • {<del>Synthetic</del><i>Plastic masses</i>, e.g. elastomers; <i>Masses provided with plastic coverings</i>}</li> </ul>
	A63B 21/0608	<ul style="list-style-type: none"> <li>• • {Eccentric weights put into orbital motion by nutating movement of the user <i>(symmetric devices, e.g. hula hoops, put into orbital motion A63B 19/00)</i>}</li> </ul>
	A63B 21/0609	<ul style="list-style-type: none"> <li>• • {<del>Loosely</del><i>consisting of loosely</i> interconnected, <del>giving</del> <i>elements for</i> progressively changing weight, e.g. heavy chains}</li> </ul>
D	A63B 21/0611	<ul style="list-style-type: none"> <li>• • {to be launched or thrown along guiding means against gravity forces}</li> </ul>
D	A63B 2021/0612	<ul style="list-style-type: none"> <li>• • • {with adjustable inclination angle of the guiding means}</li> </ul>
D	A63B 21/0613	<ul style="list-style-type: none"> <li>• • • {by moving the guiding means}</li> </ul>
D	A63B 2021/0614	<ul style="list-style-type: none"> <li>• • • {with substantially vertical guiding means (A63B 21/062 takes precedence)}</li> </ul>
	A63B 21/0615	<ul style="list-style-type: none"> <li>• • {<del>the weight</del> pivoting about a fixed horizontal fulcrum}</li> </ul>
D	A63B 2021/0616	<ul style="list-style-type: none"> <li>• • • {Weight pivot moment being adjustable}</li> </ul>
N	A63B 21/0616	<ul style="list-style-type: none"> <li>• • • {<i>with an adjustable moment (A63B 21/0617 takes precedence)</i>}</li> </ul>
D	A63B 2021/0617	<ul style="list-style-type: none"> <li>• • • {Weight pivot moment changing as a function of the pivot angle}</li> </ul>

- N A63B 21/0617
    - . . . {with a changing moment as a function of the pivot angle}
  - A63B 21/0618
    - . . {Weights moving upon in a horizontal plane without substantial friction, e.g. on wheels, i.e. using inertial forces}
  - A63B 21/062
    - . . including guide for vertical {or non-vertical weights or} array of weights {to move against gravity forces}
  - N A63B 21/0622
    - . . . {with adjustable inclination angle of the guiding means}
  - D A63B 2021/0623
    - . . . {Weight linking or selecting means}
  - N A63B 21/0624
    - . . . {by moving the guiding means}
  - D A63B 2021/0626
    - . . . {Weights being lifted by means other than flexible ones}
  - N A63B 21/0626
    - . . . {with substantially vertical guiding means}
  - N A63B 21/0628
    - . . . . {for vertical array of weights}
  - N A63B 21/063
    - . . . . . {Weight selecting means}
  - N A63B 21/0632
    - . . . . . {the weights being lifted by rigid means}
  - A63B 21/065
    - . . worn on user's user's body
  - A63B 21/068
    - . . using user's user's body weight
  - A63B 21/072
    - . . Dumb-bells, bar-bells or the like, {also other free movable weights, e.g. weight discs having an integral peripheral handle}
  - D A63B 2021/0722
    - . . . {transformable, e.g. from dumb-bell to bar-bell or club}
  - N A63B 21/0722
    - . . . {transformable, e.g. from dumb-bell to bar-bell}
  - A63B 21/0726
    - . . . {Dumb bells, i.e. with a central bar, for being to be held by a single hand, and with weights at the ends}
  - A63B 21/0728
    - . . . {Means with means for fixing weights on bars, i.e. fixing olympic discs or bumper plates on bar-bells or dumb-bells}
  - A63B 21/075
    - . . . with variable weights {, e.g. weight systems with weight selecting means for bar-bells or dumb-bells}
  - A63B 21/078
    - . . Devices for bench press exercises {, e.g. supports, guiding means}; {Supports, guiding means, drop-limiting means for bar-bells, combined or not combined with benches}
  - D A63B 2021/0783
    - . . . {Safety or other features related to bar-bells}
  - N A63B 21/0783
    - . . . {Safety features for bar-bells, e.g. drop limiting means}
  - D A63B 2021/0786
    - . . . . {drop-limiting means}
  - D A63B 21/14
    - . {Details of the interface with the user related to strength training}
- WARNING
- This group and its subgroups are not complete pending the completion of a reclassification; see also the other subgroups of A63B 21/00
- D A63B 21/1403
    - . . {Attachments of exercising apparatus to the body of the user, e.g. using special belts, shoes or gloves (A63B 21/065 takes precedence, Exoskeletons B25J 9/0006)}
  - D A63B 21/1407
    - . . . {to the head, neck}
  - D A63B 21/1411
    - . . . {to the shoulder}
  - D A63B 21/1415
    - . . . {to the chest region, including back}
  - D A63B 21/1419
    - . . . {to the waist}
  - D A63B 21/1423
    - . . . {to the lower limbs (means for physically limiting movements of body parts A63B 69/0053)}
  - D A63B 21/1426
    - . . . . {to the ankle}
  - D A63B 21/143
    - . . . . . {to the feet}
  - D A63B 21/1434
    - . . . {to the upper limbs}



D	A63B 21/1438	. . . {To the hand}
D	A63B 21/1442	. . . {To the wrist}
D	A63B 21/1446	. {Direct manipulation of the resistance (A63B 21/072 takes precedence)}
D	A63B 21/1449	. . . {Resisting device worn on the body (A63B 21/065 takes precedence)}
D	A63B 21/1453	. {Kind of exercise interface (chairs and stools with exercising means A47C 9/002)}
D	A63B 21/1457	. . . {Benches specifically designed for exercising (for bench press A63B 21/078)}
D	A63B 21/1461	. . . {With parts of the bench moving against a resistance during exercise}
D	A63B 21/1465	. . . {Handle, pedal, bar or platform}
D	A63B 21/1469	. . . {For manipulation by hand}
D	A63B 21/1473	. . {Exercise mats with or without hand or foot grips for personal use, e.g. for Yoga or supine floor exercises (A63B 6/00 takes precedence)}
D	A63B 21/1476	. . {Contoured to fit to specific body parts; e.g. back, knee or neck support (A63B 21/1403, A63B 21/1465 take precedence)}
D	A63B 21/148	. {Movement of the interface}
D	A63B 21/1484	. . {Free movement, unrestricted apart from by the resistance (A63B 21/00043, A63B 21/072 take precedence)}
D	A63B 21/1488	. . {Reciprocating movement of the interface along, in or on a guide (weights moving along or in guiding means A63B 21/06, for cardio-training A63B 22/201)}
D	A63B 21/1492	. . {Pivoting movement of the interface (weight pivoting A63B 21/08)}
D	A63B 21/1496	. . {the interface rotating about an axis}
	A63B 21/15	. { <b>Special Arrangements for</b> force transmissions <b>therefor</b> }
	A63B 21/151	. {Using flexible elements for reciprocating movements, e.g. ropes, <b>chain or chains</b> }
	A63B 21/152	. . {Bowden- <b>type</b> cables, <b>i.e. wire within a protective casing, like a bike brake cable</b> }
	A63B 21/153	. . { <b>Wound-wound</b> -up and unwound during exercise, e.g. from a reel ( <b>rewind reels B65H 75/00</b> )}
	A63B 21/154	. . { <b>Using using</b> special pulley-assemblies}
	A63B 21/156	. . . {the position of <b>one or more the</b> pulleys being variable, e.g. for different exercises}
	A63B 21/157	. {Ratchet-wheel links; <b>Overrunning clutches</b> ; <b>Overrunning clutches</b> , One-way clutches}
	A63B 21/158	. {Hydraulic transmissions ( <b>hydraulic resistance A63B 21/0081 hydraulic force resistors A63B 21/008</b> )}
U	A63B 21/16	. Supports for anchoring force-resisters
D	A63B 2021/1609	. . {on a chair}
N	A63B 21/1609	. . {for anchoring on a chair (chairs with exercising means <b>A47C 9/002</b> )}
	A63B 21/1618	. . { <b>not used, see subgroups and on a door or a A63B 21/16 door frame</b> }
	A63B 21/1627	. . . { <b>for anchoring</b> on or between the vertical posts of a door frame}
	A63B 21/1636	. . . { <b>for anchoring</b> on the horizontal part of a door frame}
	A63B 21/1645	. . . { <b>for anchoring</b> on a door}
	A63B 21/1654	. . . { <b>clamped for anchoring</b> between <b>a</b> door and <b>the</b> floor}
	A63B 21/1663	. . . { <b>clamped for anchoring</b> between <b>a</b> door and <b>the</b> door frame}
D	A63B 2021/1672	. . {on beds, mattresses}

- N A63B 21/1672
  - • {for anchoring on beds or mattresses}
- A63B 21/1681
  - • {mounted for anchoring between horizontal surfaces, e.g. the floor and the ceiling}
- D A63B 2021/169
  - • {mounted on or against a wall}
- N A63B 21/169
  - • {for anchoring on or against a wall}
- A63B 21/22
  - Resisting devices with rotary bodies, {e.g. by overcoming gyroscopic forces (A63B 21/0608 takes precedence)}
- D A63B 2021/222
  - • {by overcoming gyroscopic forces, e.g. by turning the spin axis}
- N A63B 21/222
  - • {by overcoming gyroscopic forces, e.g. by turning the spin axis}
- U A63B 21/225
  - • {with flywheels}
- A63B 21/227
  - • • {with alternate changes of changing the rotational sense direction alternately}
- A63B 21/28
  - Devices for two persons operating in opposition {or in cooperation}
- N A63B 21/40
  - {Interfaces with the user related to strength training; Details thereof}
- N A63B 21/4001
  - • {Arrangements for attaching the exercising apparatus to the user's body, e.g. belts, shoes or gloves specially adapted therefor (weights worn on the user's body A63B 21/065; exoskeletons in general B25J 9/0006, for aiding patients or disabled persons to walk about A61H 3/00)}
- N A63B 21/4003
  - • • {to the head; to the neck}
- N A63B 21/4005
  - • • {to the shoulder}
- N A63B 21/4007
  - • • {to the chest region, e.g. to the back chest}
- N A63B 21/4009
  - • • {to the waist}
- N A63B 21/4011
  - • • {to the lower limbs (means for physically limiting movements of body parts A63B 69/0057)}
- N A63B 21/4013
  - • • • {to the ankle}
- N A63B 21/4015
  - • • • {to the foot}
- N A63B 21/4017
  - • • {to the upper limbs}
- N A63B 21/4019
  - • • • {to the hand}
- N A63B 21/4021
  - • • • {to the wrist}
- N A63B 21/4023
  - • {the user operating the resistance directly, without additional interface (A63B 21/072 takes precedence)}
- N A63B 21/4025
  - • • {Resistance devices worn on the user's body (A63B 21/065 takes precedence)}
- N A63B 21/4027
  - • {Specific exercise interfaces (chairs or stools with exercising means A47C 9/002)}
- N A63B 21/4029
  - • • {Benches specifically adapted for exercising (for bench press exercises A63B 21/078)}
- N A63B 21/4031
  - • • • {with parts of the bench moving against a resistance during exercise}
- N A63B 21/4033
  - • • {Handles, pedals, bars or platforms}
- N A63B 21/4034
  - • • • {for operation by feet}
- N A63B 21/4035
  - • • • {for operation by hand}
- N A63B 21/4037
  - • • {Exercise mats for personal use, with or without hand-grips or foot-grips, e.g. for Yoga or supine floor exercises (mats for absorbing shocks A63B 6/00)}
- N A63B 21/4039
  - • • {contoured to fit to specific body parts, e.g. back, knee or neck support (arrangements for attaching exercising apparatus to the user's body A63B 21/4001; handles, pedals, bars or platforms A63B 21/4033)}
- N A63B 21/4041
  - • {characterised by the movements of the interface}

- N A63B 21/4043      • • • {Free movement, i.e. the only restriction coming from the resistance ([A63B 21/00043](#), [A63B 21/072](#) take precedence)}
- N A63B 21/4045      • • • {Reciprocating movement along, in or on a guide (weights moving along or in guiding means [A63B 21/06](#); for cardio-training [A63B 22/201](#))}
- N A63B 21/4047      • • • {Pivoting movement (weight pivoting [A63B 21/0615](#))}
- N A63B 21/4049      • • • {Rotational movement}

**U A63B 22/00**      **Exercising apparatus specially adapted for conditioning the cardio-vascular system, for training agility or co-ordination of movements (force-resisting aspects [A63B 21/00](#); {for particular parts of the body, e.g. to strengthen particular limbs or muscles [A63B 23/00](#); } electric or electronic controls therefor [A63B 24/00](#))**

#### NOTE



In this subclass, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its groups, which is considered to represent information of interest for search, may also be classified in each of those groups.

- U A63B 22/0002      • {involving an exercising of arms (for strengthening the upper limbs [A63B 23/12](#))}
- D A63B 22/0005      • • {with particular movement of the arms provided by handles moving otherwise than pivoting about a horizontal axis parallel to the body-symmetrical-plane}
- N A63B 22/0005      • • {with particular movement of the arms provided by handles moving otherwise than pivoting about a horizontal axis parallel to the body-symmetrical-plane}
- U A63B 22/0015      • {with an adjustable movement path of the support elements}
- D A63B 22/0017      • • {the adjustment being controlled by movement of the user, e.g. the applied force, the direction of rotation or the speed}
- N A63B 22/0017      • • {the adjustment being controlled by movement of the user}
- U A63B 22/002      • • • {electronically, e.g. by using a program}
- D A63B 22/0025      • {Particular aspects relating to the orientation of movement paths of the limbs relative to the body; Relative relationship between the movements of the limbs}
- N A63B 22/0025      • {Particular aspects relating to the orientation of movement paths of the limbs relative to the body; Relative relationship between the movements of the limbs}
- U A63B 22/0028      • • {the movement path being non-parallel to the body-symmetrical-plane, e.g. support elements moving at an angle to the body-symmetrical-plane}
- U A63B 22/0033      • • {Lower limbs performing together the same movement, e.g. on a single support element}
- U A63B 22/0035      • • {Upper limbs performing together the same movement, e.g. on a single support element}
- U A63B 22/0038      • • {One foot moving independently from the other, i.e. there is no link between the movements of the feet}
- U A63B 22/0041      • • {one hand moving independently from the other hand, i.e. there is no link between the movements of the hands}
- U A63B 22/0043      • • {the movements of the limbs of one body half being synchronised, e.g. the left arm moving in the same direction as the left leg}

#### Project: RP0077 (A63B)

- A63B 22/0046      • {Details of the support elements or their connection to the exercising apparatus, e.g. adjustment of size or orientation (attachments of resisters or weights to the body of the user [A63B 21/1403](#) [A63B 21/4001](#); using rollers, wheels, castors or gliding means to be moved over the floor or guide tracks [A63B 22/20](#))}

**Project: N/A (A63B)**

- U A63B 22/0048 • {with cantilevered support elements pivoting about an axis ([A63B 22/0076](#) takes precedence)}
- U A63B 22/0064 • • {the pivoting movement being in a plane inclined with respect to the horizontal plane, e.g. a step and twist movement}
- D A63B 22/0066 • • • {the movement of the support elements being downward-inward, i.e. the support elements are moving towards the body-symmetrical-plane}
- N A63B 22/0066 • • • {the support elements movement being downward-inward, i.e. towards the body-symmetrical-plane}
- A63B 22/0076 • {Rowing machines **for conditioning the cardio-vascular system** (seats moving during exercise [A63B 22/0087](#); training appliances for rowing or sculling on boats [A63B 69/06](#))}
- U A63B 22/02 • with movable endless bands {, e.g. treadmills (other training appliances for running on the spot [A63B 69/0028](#))}
- D A63B 22/0207 • • {having shock absorbing means}
- N A63B 22/0207 • • {having shock absorbing means}
- D A63B 22/0214 • • • {between the belt supporting deck and the frame}
- N A63B 22/0214 • • • {between the belt supporting deck and the frame}
- D A63B 22/0221 • • • {on the frame or sub-frame supporting the rollers}
- N A63B 22/0221 • • • {on the frame supporting the rollers}
- D A63B 22/0228 • • • {with variable resilience}
- N A63B 22/0228 • • • {with variable resilience}
- U A63B 22/0235 • • {driven by a motor}
- U A63B 22/0242 • • • {with speed variation}
- D A63B 22/025 • • • • {electrically, e.g. with D.C. motors or eddy current machines}
- N A63B 22/025 • • • • {electrically, e.g. D.C. motors with variable speed control}
- D A63B 22/0264 • • • • {hydraulically}
- N A63B 22/0264 • • • • {hydraulically}
- A63B 22/0271 • •  {omnidirectional}
- A63B 22/0278 • •  {with reversible direction of the running surface}
- D A63B 22/0292 • • {with separate belts for each leg, e.g. dual deck}
- N A63B 22/0292 • • {separate for each leg, e.g. dual deck}
- U A63B 22/06 • with {support elements performing a} rotating cycling movement, {i.e. a closed path movement}{support stands for bicycles [A63B 69/16](#); unicycles [B62K 1/00](#)}
- D A63B 22/08 • • for the legs, {i.e. only for the legs}
- U A63B 22/18 • with elements, {i.e. platforms,} having a circulating, {nutating} or rotating movement, generated by oscillating movement of the user, {e.g. platforms wobbling on a centrally arranged spherical support}{hoop exercising apparatus [A63B 19/00](#); {eccentric weights put into orbital motion by nutating movement of the user [A63B 21/0608](#); pots rotating or rocking by moving the whole body [A63G 23/00](#))}
- A63B 22/185 • • {specially adapted for using with a single foot **or hand**}
- U A63B 22/20 • using rollers, wheels, castors or the like, {e.g. gliding means,} to be moved over the floor or other surface, {e.g. guide tracks,} during exercising
- A63B 22/201 • • {for moving a support element in reciprocating translation, **e.g. i.e.** for sliding back and forth on a guide track}

**Project: RP0117 (A63B)**

- U A63B 23/00 Exercising apparatus specially adapted for particular parts of the body ([A63B 22/00](#) takes precedence; force-resisting aspects [A63B 21/00](#); electric or electronic controls therefor [A63B 24/00](#); devices for exercising or strengthening of fingers, or arms in teaching operation of keyboards [G09B 15/06](#))
- U A63B 23/035 • for limbs, i.e. upper or lower limbs, e.g. simultaneously
- U A63B 23/03516 • {For both arms together or both legs together; Aspects related to the co-ordination between right and left side limbs of a user}
- U A63B 23/03533 • • {With separate means driven by each limb, i.e. performing different movements}
- M A63B 23/03541 • • • {Moving independently from each other (~~A63B 2022/0038~~ [A63B 22/00](#) takes precedence)}

**Project: N/A (A63B)**

A63B 35/00

Swimming framework, {i.e. apparatus fixed to or held by the swimmer or diver}, with driving mechanisms operated by the swimmer or by a motor (other vessels or like floating structures for pleasure or sport [B63B 35/71](#), ~~B63B 35/73~~; ~~divers' sleds or like craft B63C 11/46~~; ~~divers' sleds or like craft B63C 11/46~~)

NOTE

References listed below indicate CPC places which could also be of interest when carrying out a search in respect of the subject matter covered by the preceding group:

Effecting propulsion of vessels by muscle power  
[B63H 16/00](#)

**Project: RP0077 (A63B)**

- U A63B 37/00 Solid balls; {Rigid hollow balls}; Marbles (heavy throwing balls [A63B 65/06](#))
- A63B 37/0003 • {Golf balls (for practising drives [A63B 69/3655](#), for practising puts [A63B 69/3688](#))}
- WARNING**  
Subgroups of A63B 37/0003 are not complete pending reclassification; see also this group

**Project: RP0117 (A63B)**

- C A63B 47/00 Devices for handling or treating balls; {, e.g. for holding ~~or carrying~~ balls (for maintaining ball pressure ~~A63B 39/02~~; ball holders combined with racket presses ~~A63B 49/16~~, with racket covers or cases ~~A63B 49/18~~, fitted on golf bags ~~A63B 55/02~~ holders for golf balls [A63B 57/20](#))}
- WARNING**  
Group [A63B 47/00](#) is impacted by reclassification into group [A63B 57/20](#). Groups [A63B 47/00](#) and [A63B 57/20](#) should be considered in order to perform a complete search.
- C A63B 47/001 • {Ball holders attached to the ~~player's~~ player's body (Golfing accessories, e.g. holders [A63B 57/20](#))}
- WARNING**  
Group [A63B 47/001](#) is impacted by reclassification into groups [A63B 57/20](#).

*Groups A63B 47/001 and A63B 57/20 should be considered in order to perform a complete search.*

## Project: RP0077, RP0117 (A63B)

### C A63B 49/00

**Tennis Stringed rackets, badminton, or like rackets e.g. for tennis (strings therefor A63B 51/00)**

#### NOTES

1. When classifying in groups A63B 49/00 - A63B 60/00, it is desirable to add the indexing codes of group A63B 2102/00.

2. When classifying in group A63B 49/00 and subgroups, subject matter related to details or accessories of golf clubs, bats, rackets or the like are further classified in group A63B 60/00.

#### WARNING

**Group A63B 49/007, A63B 49/06 are not complete pending a reclassification. See also this group, its subgroups and other groups of A63B**

*Group A63B 49/00 is impacted by reclassification into groups A63B 51/00, A63B 60/00, A63B 60/46, A63B 2102/00, A63B 2102/10, A63B 2102/12, A63B 2102/26, A63B 2102/28, A63B 2102/30, and A63B 2102/38.*

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

## Project: RP0117 (A63B)

- D A63B 49/002      • {String guides on frames}
- D A63B 49/005      • {Means for clamping string ends on frames}
- D A63B 49/007      • {Means for achieving greater mobility of the string bed}
- C A63B 49/02        • Frames

#### WARNING

*Group A63B 49/02 is impacted by reclassification into groups A63B 49/022, A63B 49/025, A63B 49/028, A63B 49/03, A63B 49/032, A63B 49/035, A63B 49/038, A63B 60/00 and A63B 60/46.*

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

- N A63B 2049/0201    • • {with defined head dimensions}
- N A63B 2049/0202    • • • {surface area}
- N A63B 2049/0203    • • • {height}
- N A63B 2049/0204    • • • {width}
- U A63B 2049/0205    • • {comprising at least two similar parts assembled with the interface plane parallel to the string plane}
- N A63B 2049/0207    • • {with defined overall length}
- U A63B 2049/0211    • • {with variable thickness of the head in a direction perpendicular to the string plane}
- N A63B 2049/0212    • • {with defined weight}
- N A63B 2049/0213    • • • {without strings}
- N A63B 2049/0214    • • • • {head only}
- M A63B 2049/0217    • • {with variable thickness of the head in the string plane}

#### WARNING

*Groups A63B 49/022 - A63B 49/038 are incomplete pending reclassification of documents from group A63B 49/02.*



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

- N A63B 49/022      • • *String guides on frames, e.g. grommets*
- D A63B 2049/0223      • • {~~with defined head dimensions~~}
- D A63B 2049/0229      • • • {~~surface area~~}
- D A63B 2049/0235      • • • {~~height~~}
- D A63B 2049/0241      • • • {~~width~~}
- D A63B 2049/0247      • • {~~with defined overall length~~}
- N A63B 49/025      • • *Means on frames for clamping string ends*
- D A63B 2049/0252      • • {~~with defined weight~~}
- D A63B 2049/0258      • • • {~~without strings~~}
- D A63B 2049/0264      • • • • {~~head only~~}
- D A63B 49/027      • • {~~Throat section, i.e. sections and elements between head and handle~~}
- D A63B 49/0276      • • • {~~T-shaped connection elements between head and handle~~}
- N A63B 49/028      • • *Means for achieving greater mobility of the string bed*
- D A63B 2049/0282      • • • {~~with two legs having mutually different constructions~~}
- D A63B 49/0288      • • {~~with easily dismountable parts, e.g. head, handle or grip~~}
- D A63B 49/0294      • • {~~with head subframes for replacing the stringing~~}
- N A63B 49/03      • • *characterised by throat sections, i.e. sections or elements between the head and the shaft*
- N A63B 49/032      • • • *T-shaped connection elements*
- N A63B 2049/0325      • • • {~~with two legs having mutually different constructions~~}
- N A63B 49/035      • • *with easily dismountable parts, e.g. heads, shafts or grips*
- N A63B 49/038      • • *with head subframes for replacing strings*
- D A63B 49/04      • • *with balancing devices {(A63B 59/0092, A63B 59/0096 take precedence)}*
- D A63B 49/06      • • *with slits {(slits for guiding strings A63B 49/002; slits for cooling or ventilation A63B 59/0037)}*
- C A63B 49/08      • • *with special construction of the handle*

**WARNING**

*Group A63B 49/08 is impacted by reclassification into groups A63B 60/00 and A63B 60/46.*

*Groups A63B 49/08, A63B 60/00, and A63B 60/46 should be considered in order to perform a complete search.*

- C A63B 49/10      • • *made of non-metallic materials, other than wood*

**WARNING**

*Group A63B 49/10 is impacted by reclassification into groups A63B 49/11, A63B 60/00, and A63B 60/46.*

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

- D A63B 49/106      • • • {~~with inflatable tubes, e.g. inflatable during fabrication~~}
- N A63B 49/11      • • • *with inflatable tubes, e.g. inflatable during fabrication*

**WARNING**

*Group A63B 49/11 is incomplete pending reclassification of documents from group A63B 49/10.*

*Groups A63B 49/10 and A63B 49/11 should be considered in order to perform a complete search.*

C	A63B 49/12	<ul style="list-style-type: none"> <li>• made of metal</li> </ul> <p><b>WARNING</b> Group A63B 49/12 is impacted by reclassification into groups A63B 60/00 and A63B 60/46. Groups A63B 49/12, A63B 60/00, and A63B 60/46 should be considered in order to perform a complete search.</p>
C	A63B 49/14	<ul style="list-style-type: none"> <li>• Protection devices on the frame</li> </ul> <p><b>WARNING</b> Group A63B 49/14 is impacted by reclassification into groups A63B 60/00 and A63B 60/46. Groups A63B 49/14, A63B 60/00, and A63B 60/46 should be considered in order to perform a complete search.</p>
D	A63B 49/16	<ul style="list-style-type: none"> <li>• Presses, {e.g. with ball holders (ball holders in general A63B 47/00)}</li> </ul>
D	A63B 49/18	<ul style="list-style-type: none"> <li>• Covers {or cases, e.g. with ball holders (ball holders in general A63B 47/00)}</li> </ul>
M	A63B 51/00	<p><b>Stringing tennis rackets</b>, <b>badminton or like rackets</b> (string guides on frames A63B 49/002; clamping strings on frames A63B 49/005); <b>Strings therefore; Maintenance of racket strings</b></p> <p><b>WARNING</b> Group A63B 51/00 is incomplete pending reclassification of documents from group A63B 49/00. Group A63B 49/00 should be considered in order to perform a complete search.</p>
M	A63B 51/005	<ul style="list-style-type: none"> <li>• {Devices for measuring the tension of <b>the string strings</b> (for controlling the tension during stringing A63B 51/14; <b>measuring force, in general G01L</b>)}</li> </ul>
D	A63B 51/007	<ul style="list-style-type: none"> <li>• {Pre-woven string-sets ready for insertion into a frame}</li> </ul>
D	A63B 51/008	<ul style="list-style-type: none"> <li>• {String-aligning tools for rackets}</li> </ul>
N	A63B 51/01	<ul style="list-style-type: none"> <li>• Pre-woven string-sets ready for insertion into a frame</li> </ul>
N	A63B 51/015	<ul style="list-style-type: none"> <li>• String-aligning tools</li> </ul>
M	A63B 51/02	<ul style="list-style-type: none"> <li>• Strings; String substitutes; {Products applied on strings, e.g. for protection against humidity or wear (<b>ropes or cables in general D07B; yarns or threads for use in sports applications D02G 3/444; mechanical methods or apparatus in the manufacture of artificial filaments, threads, fibres, bristles or ribbons D01D; strings for musical instruments G10D 3/10</b>)}</li> </ul>
U	A63B 51/04	<ul style="list-style-type: none"> <li>• Sheet-like structures used as substitutes</li> </ul>
M	A63B 51/06	<ul style="list-style-type: none"> <li>• Double-sided <b>stringings stringing</b></li> </ul>
M	A63B 51/08	<ul style="list-style-type: none"> <li>• Diagonal <b>stringings stringing</b></li> </ul>
M	A63B 51/10	<ul style="list-style-type: none"> <li>• Reinforcements for <b>stringings stringing</b></li> </ul>
D	A63B 51/105	<ul style="list-style-type: none"> <li>• {Intermediate members for string cross-points}</li> </ul>
N	A63B 51/11	<ul style="list-style-type: none"> <li>• Intermediate members for the cross-points of the strings</li> </ul>
U	A63B 51/12	<ul style="list-style-type: none"> <li>• Devices arranged in or on the racket for adjusting the tension of the strings</li> </ul>
C	A63B 51/14	<ul style="list-style-type: none"> <li>• <b>Devices Arrangements</b> for stringing, {e.g. <b>for</b> controlling the tension of the <b>string strings</b> during stringing}</li> </ul> <p><b>WARNING</b> Group A63B 51/14 is impacted by reclassification into group A63B 51/16. Groups A63B 51/14 and A63B 51/16 should be considered in order to perform a complete search.</p>
U	A63B 2051/146	<ul style="list-style-type: none"> <li>• {Devices simultaneously raising and lowering alternate longitudinal strings previously mounted in a frame, to facilitate the threading of the crossstrings}</li> </ul>

N A63B 51/16

- Apparatus for stringing while manufacturing

WARNING

Group [A63B 51/16](#) is incomplete pending reclassification of documents from group [A63B 51/14](#).

Groups [A63B 51/14](#) and [A63B 51/16](#) should be considered in order to perform a complete search.

C A63B 53/00

**Golf clubs** ~~{{cleaning or maintenance A63B 57/0087; measuring, verifying or correcting golf club characteristics A63B 59/0074; clubs or attachments on clubs for golf training A63B 69/3632}}~~

NOTE

When classifying in group [A63B 53/00](#) and subgroups, subject matter related to details or accessories of golf clubs, bats, rackets or the like are further classified in group [A63B 60/00](#).

WARNING

Group [A63B 53/00](#) is impacted by reclassification into groups [A63B 60/00](#) and [A63B 60/46](#).

Groups [A63B 53/00](#) and [A63B 60/00](#), [A63B 60/46](#) should be considered in order to perform a complete search.

C A63B 53/02

- Joint structures between the head and the shaft

WARNING

Group [A63B 53/02](#) is impacted by reclassification into groups [A63B 60/00](#) and [A63B 60/46](#).

Groups [A63B 53/02](#), [A63B 60/00](#), and [A63B 60/46](#) should be considered in order to perform a complete search.

C A63B 53/04

- Heads

WARNING

Group [A63B 53/04](#) is impacted by reclassification into groups [A63B 60/00](#) and [A63B 60/46](#).

Groups [A63B 53/04](#), [A63B 60/00](#), and [A63B 60/46](#) should be considered in order to perform a complete search.

**Project: N/A (A63B)**

D A63B 2053/0404

- • ⚔

**Project: RP0117 (A63B)**

C A63B 2053/0491

- {with added weights, e.g. changeable, replaceable}

WARNING

Group [A63B 2053/0491](#) is impacted by reclassification into group [A63B 60/02](#).

Groups [A63B 2053/0491](#) and [A63B 60/02](#) should be considered in order to perform a complete search.

C A63B 53/06

- adjustable

WARNING

Group [A63B 53/06](#) is impacted by reclassification into groups [A63B 60/00](#) and [A63B 60/46](#).

Groups [A63B 53/06](#), [A63B 60/00](#), and [A63B 60/46](#) should be considered in order to perform a complete search.

- U A63B 53/065
  - • • {for putters}
- C A63B 53/08
  - with special arrangements for obtaining a variable impact

**WARNING**  
 Group A63B 53/08 is impacted by reclassification into groups A63B 60/00, A63B 60/46.  
 Groups A63B 53/08 and A63B 60/00, A63B 60/46 should be considered in order to perform a complete search.
- C A63B 53/10
  - ~~{Shafts, e.g.} non~~Non-metallic shafts ~~{{metallic A63B 53/12}}~~

**WARNING**  
 Group A63B 53/10 is impacted by reclassification into groups A63B 60/00 and A63B 60/46.  
 Groups A63B 53/10, A63B 60/00, and A63B 60/46 should be considered in order to perform a complete search.
- C A63B 53/12
  - Metallic shafts

**WARNING**  
 Group A63B 53/12 is impacted by reclassification into groups A63B 60/00 and A63B 60/46.  
 Groups A63B 53/12, A63B 60/00, and A63B 60/46 should be considered in order to perform a complete search.
- C A63B 53/14
  - Handles

**WARNING**  
 Group A63B 53/14 is impacted by reclassification into groups A63B 60/00 and A63B 60/46.  
 Groups A63B 53/14, A63B 60/00, and A63B 60/46 should be considered in order to perform a complete search.
- D A63B 53/145
  - • {Weighted handles}
- D A63B 53/16
  - • adjustable
- C **A63B 55/00**

**Bags for golf clubs; Stands for golf clubs for use on the course; *Wheeled carriers specially adapted for golf bags***

**WARNING**  
 Group A63B 55/00 is impacted by reclassification into groups A63B 55/30, A63B 55/40, A63B 60/60, and A63B 60/64.  
 All groups listed in this Warning should be considered in order to perform a complete search.
- D A63B 2055/001
  - {Warning devices for indicating missing golf clubs}
- D A63B 2055/002
  - {Security means for locking golf clubs in the bag}
- D A63B 55/004
  - {Covers or hoods for golfbags}
- D A63B 55/005
  - • {releasably attached}
- D A63B 55/007
  - {Covers for golf club heads; Connector means therefor}
- D A63B 55/008
  - {Releasably mounted accessories fitted outside the bag, e.g. straps or holders (A63B 55/02 and A63B 55/04 take precedence; covers for golfbags A63B 55/004; covers for club heads A63B 55/007)}
- D A63B 55/02
  - with special {or detachable} receptacles for the balls
- D A63B 55/04
  - Supports, {e.g.} with devices for anchoring to the ground
- D A63B 55/045
  - • {Legs opening automatically upon putting the bag on the ground}
- D A63B 55/08
  - Wheeled carriers for golf bags (running gear or propulsion features B60; {insofar as the features thereof are generic to hand carts B62B})

- D A63B 2055/081      • • {Caddies fitted with means for sitting}
- D A63B 2055/082      • • {Means for mounting weather shields, e.g. umbrellas, on caddies}
- D A63B 2055/083      • • {with means for trailing the caddy other than by hand}
- D A63B 2055/085      • • • {by mechanical links attached to the golf players}
- D A63B 2055/086      • • • {by remote control}
- D A63B 55/087      • • {motorised}
- D A63B 2055/088      • • • {Units for converting manually-driven golf carts into motorised ones}
- M A63B 55/10      • Stands for golf clubs; {, e.g.} for use on the course {; {Golf club holders, racks or presses}
- N A63B 55/20      • with special receptacles for the balls
- N A63B 55/30      • Bags with wheels

WARNING

Group [A63B 55/30](#) is incomplete pending reclassification of documents from group [A63B 55/00](#).

Group [A63B 55/00](#) should be considered in order to perform a complete search.

- N A63B 55/40      • Bags with partitions or club holders

WARNING

Group [A63B 55/40](#) is incomplete pending reclassification of documents from group [A63B 55/00](#).

Group [A63B 55/00](#) should be considered in order to perform a complete search.

- N A63B 2055/402      • {Warning devices for indicating missing golf clubs}
- N A63B 2055/403      • {Security means for locking golf clubs in the bag}
- N A63B 55/404      • {Covers or hoods for golfbags}
- N A63B 55/406      • • {releasably attached}
- N A63B 55/408      • {Releasably mounted accessories fitted outside the bag, e.g. straps or holders ([A63B 55/20](#) and [A63B 55/50](#) take precedence)}
- Q A63B 55/50      • Supports, e.g. with devices for anchoring to the ground

WARNING

Group [A63B 55/50](#) is impacted by reclassification into group [A63B 55/57](#).

Groups [A63B 55/50](#) and [A63B 55/57](#) should be considered in order to perform a complete search.

- Q A63B 55/53      • • with legs opening automatically upon putting the bag on the ground

WARNING

Group [A63B 55/53](#) is impacted by reclassification into group [A63B 55/57](#).

Groups [A63B 55/53](#) and [A63B 55/57](#) should be considered in order to perform a complete search.

- N A63B 55/57      • • Bags with tripod or like set-up stands

WARNING

Group [A63B 55/57](#) is incomplete pending reclassification of documents from groups [A63B 55/50](#), [A63B 55/53](#), [A63B 55/60](#) and [A63B 55/61](#).

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

- Q A63B 55/60
- Wheeled carriers specially adapted for golf bags
- WARNING  
Group [A63B 55/60](#) is impacted by reclassification into group [A63B 55/57](#). Groups [A63B 55/60](#) and [A63B 55/57](#) should be considered in order to perform a complete search.
- N A63B 2055/601
- {Caddies fitted with means for sitting}
- N A63B 2055/602
- {Means for mounting weather shields, e.g. umbrellas, on caddies}
- N A63B 2055/603
- {with means for trailing the caddy other than by hand}
- N A63B 2055/604
- • {by mechanical links attached to the golf players}
- N A63B 2055/605
- • {by remote control}
- Q A63B 55/61
- {motorised}
- WARNING  
Group [A63B 55/61](#) is impacted by reclassification into group [A63B 55/57](#). Groups [A63B 55/61](#) and [A63B 55/57](#) should be considered in order to perform a complete search.
- N A63B 2055/615
- • {Units for converting manually-driven golf carts into motorised ones}
- C A63B 57/00**
- Golf game ~~Golfing~~ accessories, e.g. golf cups, golf tees**
- WARNING  
Group [A63B 57/00](#) is impacted by reclassification into groups [A63B 57/12](#), [A63B 57/16](#), [A63B 57/20](#), [A63B 57/30](#), and [A63B 57/35](#). All groups listed in this Warning should be considered in order to perform a complete search.
- U A63B 57/0006
- {Automatic teeing devices (devices for automatically dispensing balls in general [A63B 47/002](#))}
- U A63B 57/0012
- {Devices for forming the tees}
- D A63B 57/0018
- {Tees; Tee-holders; Devices for inserting or extracting tees}
- D A63B 2057/0025
- • {With adjustable height}
- D A63B 57/0031
- {Tee-holders (to be fitted on golf bags or caddies [A63B 55/008](#)); Tee-gauges; Tee-repairing devices}
- Q A63B 57/0032
- {Tee-gauges; Tee-repairing devices}
- WARNING  
Group [A63B 57/0032](#) is impacted by reclassification into group [A63B 57/203](#). Groups [A63B 57/0032](#) and [A63B 57/203](#) should be considered in order to perform a complete search.
- M A63B 57/0037
- • {Devices for inserting or extracting tees}
- D A63B 57/0043
- • {Brush-type tee}
- WARNING  
Not complete, pending the reclassification; see also other subgroups of A63B 57/00
- D A63B 57/005
- • {Tethered to something, e.g. ground or second body}
- WARNING  
Not complete, pending the reclassification; see also other subgroups of A63B 57/00
- D A63B 57/0056
- {Cups (with automatic ball ejector [A63B 57/0062](#)); Hole or ball traps; Markers therefor, e.g. flags}



- D A63B 57/0062      • {Cups with automatic ball ejector means}
- D A63B 57/0068      • {for maintenance or repairing, e.g. of courts, greens, sands}
- D A63B 57/0075      • {Golf ball position markers or marker-holders}
- D A63B 57/0081      • {Hole information stands, e.g. tee-boxes}
- D A63B 57/0087      • {Cleaning or maintenance of golf clubs, putters, shoes or other golf accessories (cleaning balls A63B 47/04; cleaning grips A63B 59/0062; cleaning footwear in general A47L 23/00)}
- D A63B 2057/0093      • • {Means for heating or drying golf clubs}
- Q A63B 57/10      • Golf tees

WARNING

Group [A63B 57/10](#) is impacted by reclassification into groups [A63B 57/12](#), [A63B 57/13](#), [A63B 57/16](#), [A63B 57/18](#) and [A63B 57/19](#).

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

- N A63B 57/12      • • attached to straps

WARNING

Groups [A63B 57/12](#) is incomplete pending reclassification of documents from groups [A63B 57/00](#) and [A63B 57/10](#).

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

- N A63B 57/13      • • foldable or separable

WARNING

Group [A63B 57/13](#) is incomplete pending reclassification of documents from group [A63B 57/10](#).

Groups [A63B 57/13](#) and [A63B 57/10](#) should also be considered in order to perform a complete search.

- N A63B 57/15      • • height-adjustable

- N A63B 57/16      • • Brush-type tees

WARNING

Group [A63B 57/16](#) is incomplete pending reclassification of documents from groups [A63B 57/00](#) and [A63B 57/10](#).

Groups [A63B 57/00](#) and [A63B 57/10](#) should be considered in order to perform a complete search.

- N A63B 57/18      • • with writing means

WARNING

Groups [A63B 57/18](#) is incomplete pending reclassification of documents from group [A63B 57/10](#).

Group [A63B 57/10](#) should be considered in order to perform a complete search.

- N A63B 57/19      • • with direction indicators

WARNING

Group [A63B 57/19](#) is incomplete pending reclassification of documents from group [A63B 57/10](#).

Group [A63B 57/10](#) should be considered in order to perform a complete search.

- N A63B 57/20
- Holders, e.g. of tees or of balls
- WARNING  
Group [A63B 57/20](#) is incomplete pending reclassification of documents from groups [A63B 47/00](#), [A63B 47/001](#), and [A63B 57/00](#).  
Groups [A63B 47/00](#), [A63B 47/001](#), and [A63B 57/00](#) should be considered in order to perform a complete search.
- Q A63B 57/203
- {Tee holders (to be fitted on golf bags or caddies [A63B 55/408](#))}
- WARNING  
Group [A63B 57/203](#) is impacted by reclassification into groups [A63B 57/10](#), [A63B 57/12](#), [A63B 57/13](#), [A63B 57/16](#), [A63B 57/18](#), and [A63B 57/19](#).  
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A63B 57/207
- {Golf ball position marker holders}
- WARNING  
Group [A63B 57/207](#) is impacted by reclassification into group [A63B 57/353](#).  
Groups [A63B 57/207](#) and [A63B 57/353](#) should be considered in order to perform a complete search.
- N A63B 57/30
- Markers
- WARNING  
Groups [A63B 57/30](#) and [A63B 57/35](#) are incomplete pending reclassification of documents from group [A63B 57/00](#).  
Group [A63B 57/00](#) should be considered in order to perform a complete search.
- N A63B 57/35
- with magnets
- Q A63B 57/353
- {Golf ball position markers}
- WARNING  
Group [A63B 57/353](#) is impacted by reclassification into group [A63B 57/207](#).  
Groups [A63B 57/353](#) and [A63B 57/207](#) should be considered in order to perform a complete search.
- Q A63B 57/357
- {for golf cups or holes, e.g. flags}
- WARNING  
Group [A63B 57/357](#) is impacted by reclassification into group(s) [A63B 57/40](#).  
Groups [A63B 57/357](#) and [A63B 57/40](#) should be considered in order to perform a complete search.
- Q A63B 57/40
- Golf cups or holes
- WARNING  
Group [A63B 57/40](#) is impacted by reclassification into group [A63B 57/357](#).  
Groups [A63B 57/40](#) and [A63B 57/357](#) should be considered in order to perform a complete search.
- N A63B 57/405
- {Cups with automatic ball ejector means}
- N A63B 57/50
- specially adapted for course maintenance
- N A63B 57/505
- {Hole information stands, e.g. tee-boxes}
- N A63B 57/60
- Cleaning or maintenance of golf clubs, putters, shoes or other golf accessories ({cleaning balls [A63B 47/04](#);} devices for cleaning handles or grips of golf clubs or putters [A63B 60/36](#))
- N A63B 2057/605
- {Means for heating or drying golf clubs}

**Project: RP0077, RP0117 (A63B)****C A63B 59/00**

Bats, rackets, or the like, **for other games not covered by groups A63B 49/00 - A63B 57/00 (bats with a ball tethered thereto A63B 67/20 details A63B 60/00)**; {Hand-held throwing or catching aids; Details or accessories of bats, rackets or the like, not limited to one of the groups A63B 49/00 to A63B 57/00, or not otherwise provided for}

NOTES

1. In this group, the following term is used with the meaning indicated:
  - "ball" covers also pucks or other objects to be hit during the game.
2. When classifying in group A63B 59/00 and subgroups, subject matter related to details or accessories of golf clubs, bats, rackets or the like are further classified in group A63B 60/00.

WARNING

Group A63B 59/00 is impacted by reclassification into groups A63B 60/00, A63B 60/46, A63B 2102/00, A63B 2102/10, A63B 2102/12, A63B 2102/26, A63B 2102/28, A63B 2102/30, and A63B 2102/38.

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

**Project: RP0117 (A63B)**

- |                  |   |
|------------------|---|
| D A63B 2059/0003 | • {Resonance frequency-related characteristics}                             |
| D A63B 2059/0007 | • {Striking surfaces coated with high-friction abrasive material}           |
| D A63B 2059/0011 | • {having special surfaces reducing air resistance}                         |
| D A63B 59/0014   | • {Handles or grips (A63B 49/08 takes precedence)}                          |
| D A63B 2059/0018 | • • {Devices measuring hand characteristics to determine correct grip size} |
| D A63B 2059/0022 | • • {Means for indicating or measuring the pressure on the grip}            |

**Project: RP0077, RP0117 (A63B)**

- |                |   |
|----------------|---|
| D A63B 59/0025 | • • {contoured according to the anatomy of the user's hand}<br><u>WARNING</u><br>Not complete, pending the completion of a reclassification                                     |
| D A63B 59/0029 | • • {Coverings specially adapted therefor, e.g. sleeves, ribbons}<br><u>WARNING</u><br>Not complete, pending the completion of a reclassification]                              |
| D A63B 59/0033 | • • {Caps, ferrules}<br><u>WARNING</u><br>Not complete, pending the completion of a reclassification  |
| D A63B 59/0037 | • • {with grooves or holes for cooling, ventilating or sweat reduction; with powder dispensers}<br><u>WARNING</u><br>Not complete, pending the completion of a reclassification |
| D A63B 59/004  | • • {with two handgrips}<br><u>WARNING</u><br>Not complete, pending the completion of a reclassification  |

- D A63B 59/0044
  - {adjustable-in-length}
  - WARNING
  - Not complete, pending the completion of a reclassification
- D A63B 59/0048
  - {with adjustable perimetric length}
  - WARNING
  - Not complete, pending the completion of a reclassification
- D A63B 59/0051
  - {with means for changing the angular position of the handle about its longitudinal axis}
  - WARNING
  - Not complete, pending the completion of a reclassification
- D A63B 59/0055
  - {the handle axis being different from the main axis of the bat or racket}
  - WARNING
  - Not complete, pending the completion of a reclassification
- D A63B 59/0059
  - {adjustable-in-stiffness}
  - WARNING
  - Not complete, pending the completion of a reclassification

**Project: RP0117 (A63B)**

- D A63B 59/0062
  - {Devices for cleaning handles or grips}
- D A63B 59/0066
  - {Bats or rackets having ball-dispensing means}
- D A63B 59/007
  - {Bats or rackets with holding means provided inside, on the edge or on the rear face of the the striking surface (A63B 59/02 and A63B 59/04 take precedence)}
- D A63B 59/0074
  - {Devices for measuring, verifying, correcting or customizing characteristics of golf-clubs, bats or rackets (having a weight movable along the longitudinal axis of the club due to centrifugal forces A63B 15/005)}
- D A63B 59/0077
  - {corrugated cross-sections}
  - WARNING
  - Not complete, pending the completion of a reclassification
- D A63B 2059/0081
  - {Substantially flexible shafts, hinged shafts}
- D A63B 2059/0085
  - {Telescopic shafts}
- D A63B 59/0088
  - {Bats with through holes}
- D A63B 59/0092
  - {Means for damping vibration (A63B 15/005 takes precedence)}
- D A63B 59/0096
  - {Movable ballast means for varying the centre of mass during the stroke, e.g. by centrifugal force (A63B 15/005 takes precedence; weights set in movement on impact of the ball for damping vibrations A63B 59/0092)}
- D A63B 59/02
  - for lacrosse, pelota or similar games; {Bats or rackets having means for catching or holding a ball, e.g. pockets, netting, adhesive type surface; Hand-held throwing or catching aids (juggling games with integral catching arrangements A63B 67/083)}
- D A63B 59/025
  - {Hand-held throwing or catching aids for use with rings, discs, wheels or cylindrical throwing-bodies, or for use with balls having a central bore}
- D A63B 59/04
  - for table tennis
- D A63B 59/06
  - for baseball, rounders, or similar games
- D A63B 2059/065
  - {with a continuously tapered barrel}
- D A63B 59/08
  - for cricket

- D A63B 59/10 • for croquet; {Mallet-form bats (polo mallets A63B 59/16)}
- D A63B 59/12 • for hockey, {e.g. hurley sticks}
- D A63B 59/14 • for ice hockey {(A63B 59/12 takes precedence)}
- D A63B 59/16 • for polo
- D A63B 59/18 • Circular {or similar planar} bats for other games {(not covered by groups A63B 59/02 to A63B 59/16)}
- D A63B 59/185 • {Paddles for paddle tennis, pádel tennis or platform tennis (stringed rackets for tennis or the like A63B 49/00)}
- Q A63B 59/20 • having means, e.g. pockets, netting or adhesive type surfaces, for catching or holding a ball, e.g. for lacrosse or pelota

WARNING

Group [A63B 59/20](#) is impacted by reclassification into group(s) [A63B 60/00](#), [A63B 60/46](#).

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

- N A63B 59/30 • forming hand-held throwign or catching aids for use with rings, discs, wheels or cylindrical throwign-bodies, or for use with balls having a central bore
- Q A63B 59/40 • Rackets or the like with flat striking surfaces for hitting a ball int he air, e.g. for table tennis

WARNING

Group [A63B 59/40](#) is impacted by reclassification into groups [A63B 59/42](#), [A63B 59/45](#), [A63B 60/00](#), [A63B 60/46](#), and [A63B 2102/16](#).

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

- N A63B 59/42 • • with solid surfaces
- N A63B 59/45 • • Rubber parts thereof; characterised by bonding between a rubber part and the racket body
- N A63B 59/48 • • with perforated surfaces
- Q A63B 59/50 • Substantially rod-shaped bats for hitting a ball in the air, e.g. for baseball

WARNING

Group [A63B 59/50](#) is impacted by reclassification into groups [A63B 59/51](#), [A63B 59/52](#), [A63B 59/54](#), [A63B 59/55](#), [A63B 59/56](#), [A63B 59/58](#), [A63B 2059/581](#), [A63B 59/59](#), [A63B 59/60](#), [A63B 59/70](#), [A63B 59/80](#), [A63B 60/00](#), [A63B 60/46](#), [A63B 2102/18](#), [A63B 2102/182](#), and [A63B 2102/184](#).

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

- N A63B 59/51 • • made of metal
- N A63B 59/52 • • made of wood or bamboo
- N A63B 59/54 • • made of plastic
- N A63B 59/55 • • with non-circular cross-section
- N A63B 59/56 • • characterised by the head
- N A63B 59/58 • • characterised by the shape ([A63B 59/55](#), [A63B 59/56](#) take precedence)
- N A63B 2059/581 • • {with a continuously tapered barrel}
- N A63B 59/59 • • with sound generators, e.g. with internal movable members therefor
- Q A63B 59/60 • of mallet type, e.g. for croquet {or polo}

WARNING

Group [A63B 59/60](#) is impacted by reclassification into groups [A63B 60/00](#), [A63B 60/46](#), [A63B 2102/34](#), and [A63B 2102/36](#).

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

- Q A63B 59/70
- with bent or angled lower parts for hitting a ball on the ground, on an ice-covered surface, or in the air, e.g. for hockey or hurling

**WARNING**

Group [A63B 59/70](#) is impacted by reclassification into group [A63B 60/00](#), [A63B 60/46](#), [A63B 2102/22](#), and [A63B 2102/24](#).

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

- Q A63B 59/80
- Circular bats or paddles not provided for in groups [A63B 59/20](#) - [A63B 59/70](#)

**WARNING**

Group [A63B 59/80](#) is impacted by reclassification into groups [A63B 60/00](#), and [A63B 60/46](#).

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

**N A63B 60/00**

**Details or accessories of golf clubs, bats, rackets or the like**

**WARNING**

Group [A63B 60/00](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) - [A63B 49/14](#), [A63B 53/00](#) - [A63B 53/14](#), [A63B 59/00](#), [A63B 59/20](#), [A63B 59/40](#) and [A63B 59/60](#) - [A63B 59/80](#).

Groups [A63B 59/00](#), [A63B 59/20](#), [A63B 59/40](#) and [A63B 59/60](#) - [A63B 59/80](#) should also be considered in order to perform a complete search.

- N A63B 2060/002
- {Resonance frequency related characteristics}
- N A63B 2060/004
- {striking surfaces coated with high-friction abrasive material}
- N A63B 2060/006
- {having special surfaces reducing air resistance}
- N A63B 2060/0081
- {Substantially flexible shafts, hinged shafts}
- N A63B 2060/0085
- {Telescopic shafts}
- N A63B 60/02
- Ballast means for adjusting the centre of mass ([A63B 60/24](#), [A63B 60/54](#) take precedence)

**WARNING**

Group [A63B 60/02](#) is incomplete pending reclassification of documents from group [A63B 60/42](#) and [A63B 2053/0491](#).

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

- N A63B 60/04
- • Movable ballast means {([A63B 15/005](#) takes precedence)}

**WARNING**

Group [A63B 60/04](#) is incomplete pending reclassification of documents from group [A63B 15/005](#).

Groups [A63B 15/005](#) and [A63B 60/04](#) should be considered in order to perform a complete search.

- Q A63B 60/06
- Handles (structurally associated with frames of stringed rackets [A63B 49/08](#))

**WARNING**

Group [A63B 60/06](#) is impacted by reclassification into groups [A63B 60/08](#) and [A63B 60/10](#).

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

- N A63B 60/08
- • characterised by the material



- N A63B 60/10
- with means for indicating correct holding positions ([A63B 60/12](#) takes precedence)
- Q A63B 60/12
- contoured according to the anatomy of the user's hand
- WARNING
- Group [A63B 60/12](#) is impacted by reclassification into groups [A63B 60/08](#) and [A63B 60/10](#).  
All groups listed in this Warning should be considered in order to perform a complete search.
- N A63B 60/14
- Coverings specially adapted for handles, e.g. sleeves or ribbons
- N A63B 60/16
- Caps; Ferrules
- N A63B 60/18
- with means for cooling, ventilating or sweat-reduction, e.g. holes or powder dispensers
- N A63B 60/20
- with two handgrips
- N A63B 60/22
- Adjustable handles
- N A63B 60/24
- Weighted handles
- N A63B 60/26
- with adjustable stiffness
- N A63B 60/28
- with adjustable length
- N A63B 60/30
- with adjustable circumference
- N A63B 60/32
- with means for changing the angular position of the handle about its longitudinal axis
- N A63B 60/34
- with the handle axis different from the main axis of the implement
- N A63B 60/36
- Devices for cleaning handles or grips
- N A63B 60/38
- Structurally associated means for storing and dispensing balls
- N A63B 60/40
- having holding means provided inside, on the edge or on the rear face of the striking surface
- Q A63B 60/42
- Devices for measuring, verifying, correcting or customising the inherent characteristics of golf clubs, bats, rackets or the like, e.g. measuring the maximum torque a batting shaft can withstand
- WARNING
- Group [A63B 60/42](#) is impacted by reclassification into group [A63B 60/02](#).  
Groups [A63B 60/42](#) and [A63B 60/02](#) should be considered in order to perform a complete search.
- N A63B 60/44
- Presses for stringed rackets
- N A63B 60/46
- Measurement devices associated with golf clubs, bats, rackets or the like for measuring physical parameters relating to sporting activity, e.g. baseball bats with impact indicators or bracelets for measuring the golf swing
- WARNING
- Group [A63B 60/46](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) - [A63B 49/14](#), [A63B 53/00](#) - [A63B 53/14](#), [A63B 59/20](#), [A63B 59/40](#) and [A63B 59/60](#) - [A63B 59/80](#).  
Groups [A63B 49/00](#) - [A63B 49/14](#), [A63B 53/00](#) - [A63B 53/14](#), [A63B 59/20](#), [A63B 59/40](#) and [A63B 59/60](#) - [A63B 59/80](#) should be considered in order to perform a complete search.
- N A63B 2060/462
- {Devices measuring hand characteristics to determine correct grip size}
- N A63B 2060/464
- {Means for indicating or measuring the pressure on the grip}
- N A63B 60/48
- with corrugated cross-section
- N A63B 60/50
- with through-holes ([A63B 60/18](#) takes precedence; for stringing purposes [A63B 49/00](#))

- N A63B 60/52      • with slits
- N A63B 60/54      • with means for damping vibrations
- N A63B 60/56      • Devices for protection, storage or transport, e.g. stands or cases

**WARNING**

Group [A63B 60/56](#) is incomplete pending reclassification of documents from group [A63B 71/0036](#).

Groups [A63B 71/0036](#) and [A63B 60/56](#) should be considered in order to perform a complete search.

- N A63B 60/58      • • specially adapted for rackets
- N A63B 60/60      • • specially adapted for bats

**WARNING**

Group [A63B 60/60](#) is incomplete pending reclassification of documents from groups [A63B 55/00](#) and [A63B 71/0045](#).

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

- N A63B 60/62      • • specially adapted for clubs, e.g. head covers {, connector means therefor}
- N A63B 60/64      • • • Sheaths for golf clubs

**WARNING**

Group [A63B 60/64](#) is incomplete pending reclassification of documents from group [A63B 55/00](#).

Groups [A63B 55/00](#) and [A63B 60/64](#) should be considered in order to perform a complete search.

**M A63B 63/00      Targets or goals for ball games (golf cups [A63B 57/00](#) [A63B 57/40](#))**

- M A63B 63/08      • with {substantially} horizontal opening for ball, e.g. for basketball  
 {( [A63B 57/0056](#) [A63B 57/40](#), [A63B 63/06](#) take precedence)}

**U A63B 65/00      Implements for throwing (throwing toys [A63H 33/18](#); throwing weapons [F41B](#)); {Mechanical projectors, e.g. using spring force}**

- M A63B 65/12      • ~~Ball-throwing apparatus with or without catchers;~~ [Ball-throwing apparatus with or without catchers](#) {(hand-held throwing or catching aids [A63B 59/02](#) [A63B 59/20](#)); Mechanical projectors, e.g. using spring force}

**U A63B 69/00      Training appliances or apparatus for special sports (training of parachutists [B64D 23/00](#))**

- U A63B 69/0073      • {Means for releasably holding a ball in position; Balls constrained to move around a fixed point, e.g. by tethering (not used, see subgroups and [A63B 69/00](#))}
- M A63B 69/0075      • • {Means for releasably holding a ball in position prior to kicking, striking or the like (golf tees [A63B 57/0018](#) [A63B 57/10](#))}

**Project: N/A (A63B)**

- U A63B 69/36      • for golf
- A63B 2069/3602      • • {~~Player's~~ [Player's](#) game information devices (not used)}
- U A63B 69/3623      • • {for driving ([A63B 69/3608](#), [A63B 69/3658](#), [A63B 69/3661](#), [A63B 69/3667](#) and [A63B 69/3691](#) take precedence)}
- U A63B 2069/3626      • • • {Details (not used)}
- A63B 2069/3629      • • • • {Visual means not attached to the body for positioning the ~~trainee's~~ [trainee's](#) head or for detecting head movement, e.g. by parallax}
- A63B 69/3667      • • {Golf stance aids, e.g. means for positioning a ~~golfer's~~ [golfer's](#) feet}

- U A63B 69/3676
  - • {for putting ([A63B 69/3608](#), [A63B 69/3661](#), [A63B 69/3667](#) and [A63B 69/3697](#) take precedence)}
- U A63B 2069/3679
  - • • {Details (not used)}
- A63B 2069/3682
  - • • • {Visual means not attached to the body for positioning the ~~trainee's~~[trainee's](#) head or for detecting head movement, e.g. by parallax}

**Project: RP0117 (A63B)**

- M A63B 69/40
  - Stationarily-arranged devices for projecting balls {or other bodies-}({ball-dispensing devices [A63B 47/002](#); golf cups with ball ejector means ~~A63B 57/0062~~[A63B 57/405](#); targets with means for returning balls by gravity or mechanically [A63B 63/00](#); [sling weapons F41B 3/00](#);} [traps for clay-pigeon targets F41J 9/18](#));} (~~sling weapons F41B 3/00~~; ~~traps for clay-pigeon targets F41J 9/18~~)
- U A63B 71/00
 

**Games or sports accessories not covered in groups [A63B 1/00](#) to [A63B 69/00](#) (starting appliances [A63K 3/02](#))**
- C A63B 71/0036
  - {Accessories for stowing, putting away or transporting exercise apparatus or sports equipment (~~handling or treating balls A63B 47/00~~; ~~for golf clubs A63B 55/00~~[A63B 47/00](#), [A63B 55/00](#), [A63B 60/56](#) take precedence)}

WARNING  
*Group [A63B 71/0036](#) is impacted by reclassification into group [A63B 60/56](#). Groups [A63B 71/0036](#) and [A63B 60/56](#) should be considered in order to perform a complete search.*
- C A63B 71/0045
  - • {specially adapted for games played with rackets or bats ([A63B 60/56](#) takes precedence)}

WARNING  
*Group [A63B 71/0045](#) is impacted by reclassification into group [A63B 60/60](#). Groups [A63B 71/0045](#) and [A63B 60/60](#) should be considered in order to perform a complete search.*

**Project: N/A (A63B)**

- U A63B 71/02
  - for large-room or outdoor sporting games
- U A63B 71/023
  - • {Supports, e.g. poles}
- U A63B 2071/026
  - • • {stabilised by weight}
- A63B 2071/027
  - • • • {using ~~player's~~[player's](#) own weight, e.g. on a platform}
- U A63B 71/08
  - Body-protectors for players or sportsmen, {i.e. body-protecting accessories affording protection of body parts against blows or collisions}(protective clothing or garments for sporting purposes [A41D 13/00](#))
- A63B 71/14
  - • for the hands e.g. baseball, boxing or golfing gloves (~~archer's finger tabs F41B 5/1473~~[archer's finger tabs F41B 5/1473](#))

**Project: RP0117 (A63B)**

- U A63B 71/141
  - • • {in the form of gloves (gloves in general [A41D 19/00](#))}
- U A63B 71/148
  - • • • {Gloves for bowling and other ball games}

**N A63B 2102/00**      **Application of clubs, bats, rackets or the like to the sporting activity {; particular sports involving the use of balls and clubs, bats, rackets, or the like}**

NOTE

[A63B 2102/00](#) corresponds to IPC [A63B 102/00](#). [A63B 2102/00](#) is an indexing scheme for all applicable areas of [A63B](#).

WARNING

Group [A63B 2102/00](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#), [A63B 59/00](#), and [A63B 2243/00](#).

Groups [A63B 49/00](#), [A63B 59/00](#), [A63B 2243/00](#) and [A63B 2102/00](#) should be considered in order to perform a complete search.

- N A63B 2102/02      • Tennis
- N A63B 2102/04      • Badminton
- N A63B 2102/06      • Squash
- N A63B 2102/065      • • {Racketball}
- N A63B 2102/08      • Paddle tennis, padel tennis or platform tennis
- N A63B 2102/10      • Battledore

WARNING

Group [A63B 2102/10](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) and [A63B 59/00](#).

Groups [A63B 49/00](#) and [A63B 59/00](#) should be considered in order to perform a complete search.

- N A63B 2102/12      • Hanetsuki

WARNING

Group [A63B 2102/12](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) and [A63B 59/00](#).

Groups [A63B 49/00](#) and [A63B 59/00](#) should be considered in order to perform a complete search.

- N A63B 2102/14      • Lacrosse
- N A63B 2102/16      • Table tennis
- Q A63B 2102/18      • Baseball, rounders or similar games

WARNING

Group [A63B 2102/18](#) is impacted by reclassification into groups [A63B 59/50](#), [A63B 59/51](#), [A63B 59/52](#), [A63B 59/54](#), [A63B 59/55](#), [A63B 59/56](#), [A63B 59/58](#), [A63B 2059/581](#), [A63B 59/59](#), [A63B 59/60](#), [A63B 59/70](#), [A63B 59/80](#), [A63B 60/00](#), [A63B 60/46](#), [A63B 2102/182](#), and [A63B 2102/184](#).

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

- N A63B 2102/182      • • {Softball}
- N A63B 2102/184      • • {Rounders}
- N A63B 2102/20      • Cricket
- N A63B 2102/22      • {Field} hockey
- N A63B 2102/24      • Ice hockey
- N A63B 2102/26      • Hurling

WARNING

Group [A63B 2102/26](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) and [A63B 59/00](#).

Groups [A63B 49/00](#), [A63B 59/00](#), and [A63B 2102/26](#) should be considered in order to perform a complete search.

N A63B 2102/28

• Bandy

WARNING

Group [A63B 2102/28](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) and [A63B 59/00](#).

Groups [A63B 49/00](#), [A63B 59/00](#), and [A63B 2102/28](#) should be considered in order to perform a complete search.

N A63B 2102/30

• Floorball

WARNING

Group [A63B 2102/30](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) and [A63B 59/00](#).

Groups [A63B 49/00](#), [A63B 59/00](#), and [A63B 2102/30](#) should be considered in order to perform a complete search.

N A63B 2102/32

• Golf

N A63B 2102/34

• Polo

N A63B 2102/36

• Croquet

N A63B 2102/38

• Gateball

WARNING

Group [A63B 2102/38](#) is incomplete pending reclassification of documents from groups [A63B 49/00](#) and [A63B 59/00](#).

Groups [A63B 49/00](#), [A63B 59/00](#) should be considered in order to perform a complete search.

**Project: N/A (A63B)**

U A63B 2230/00

Measuring physiological parameters of the user

A63B 2230/01

• ~~User's~~User's weight

**Project: RP0117 (A63B)**

C A63B 2243/00

Specific ball sports **not provided for in [A63B 2102/00](#) - [A63B 2102/38](#)**

WARNING

Group [A63B 2243/00](#) is impacted by reclassification into group [A63B 2102/00](#). Groups [A63B 2243/00](#) and [A63B 2102/00](#) should be considered in order to perform a complete search.

D A63B 2243/0004

• Baseball, softball, rounders

D A63B 2243/0008

• • Softball

D A63B 2243/0012

• • Rounders

D A63B 2243/0016

• Cricket

U A63B 2243/0025

• Football (American football [A63B 2243/007](#))

D A63B 2243/0029

• Golf

U A63B 2243/0033

• Handball

U A63B 2243/0037

• Basketball

D A63B 2243/0041

• Hockey

D A63B 2243/0045

• • Ice hockey

D A63B 2243/005

• Lacrosse

U A63B 2243/0066

• Rugby; American football

- U A63B 2243/007      • • American football
- D A63B 2243/0075      • ~~Squash, racketball~~
- D A63B 2243/0079      • • Racketball
- D A63B 2243/0083      • Tennis
- D A63B 2243/0087      • • Badminton
- D A63B 2243/0091      • ~~Table tennis~~

**Project: N/A (A63C)****U A63C 10/00****Snowboard bindings**

- U A63C 10/02      • characterised by details of the shoe holders
- U A63C 10/04      • • Shoe holders for passing over the shoe
- A63C 10/045      • • • {with means to ease introduction of the shoe, e.g. by collapsing upstanding shoe holder parts}
- U A63C 10/10      • • using parts which are fixed on the shoe, e.g. means to facilitate step-in
- A63C 10/103      • • • {on the sides of the shoe}
- A63C 10/106      • • • {to the front and back of the shoe}
- U A63C 10/14      • Interfaces, e.g. in the shape of a plate
- A63C 10/145      • • {between two superimposed binding systems, e.g. cradle}
- U A63C 10/28      • characterised by auxiliary devices or arrangements on the bindings
- A63C 10/285      • • {Pads as foot or binding supports, e.g. pads made of foam}

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

- U A63C 17/0006      • {Accessories}
- A63C 17/0013      • • {Devices used in combination with the skate but not fixed to it, e.g. supporting frames, sail, sticks, auxiliary wheel aid ~~{B62D 51/06 Uniaxle walk-type tractors}~~ {Uniaxle walk-type tractors B62D 51/06}}
- A63C 17/0033      • {with a castor wheel, i.e. a swiveling follow-up wheel}
- A63C 17/004      • {with auxiliary wheels not contacting the riding surface during steady riding}
- U A63C 17/01      • Skateboards ([A63C 17/02](#) to [A63C 17/28](#) take precedence; {rolling devices on skis [A63C 5/035](#)})
- A63C 17/011      • • {with steering mechanisms}
- A63C 17/012      • • • {with a truck, i.e. with steering mechanism comprising an inclined geometrical axis to convert lateral tilting of the board in steering of the wheel axis}
- A63C 17/013      • • • {with parallelograms, follow up wheels or direct steering action}
- A63C 17/014      • • {Wheel arrangements}
- A63C 17/015      • • • {with wheels arranged in two pairs}
- A63C 17/016      • • • {with wheels arranged in one track}
- A63C 17/017      • • {Production or mounting thereof}
- U A63C 17/04      • with wheels arranged otherwise than in two pairs ({[A63C 17/01](#) takes precedence})
- A63C 17/045      • • {Roller skis}
- U A63C 17/06      • • single-track type
- A63C 17/061      • • • {with relative movement of sub-parts on the chassis}
- A63C 17/062      • • • • {with a pivotal frame or cradle around transversal axis for relative movements of the wheels}
- A63C 17/064      • • • • {comprising steered wheels, i.e. wheels supported on a vertical axis}



- A63C 17/067
  - A63C 17/068
  - U A63C 17/14
  - U A63C 17/1409
  - A63C 17/1418
  - A63C 17/1427
  - U A63C 17/26
  - A63C 17/262
  - A63C 17/265
  - A63C 17/267
- • • {with adjustable position of the foot plate or shoe relative to the chassis}
  - • • {Production or mounting thereof}
  - with brakes, e.g. toe stoppers, freewheel roller clutches
  - • {contacting one or more of the wheels}
  - • • {with radial movement against the roll surface of the wheel}
  - • • {the brake contacting other wheel associated surfaces, e.g. hubs, brake discs or wheel flanks}
  - with special auxiliary arrangements, e.g. illuminating, marking, or push-off devices
  - • {with foot bindings or supports therefor}
  - • {with handles or hand supports}
  - • {combined with wings or sails}

**Project: N/A (A63D)****A63D 9/00****Pins**NOTE

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

- "Bagatelle" means a modification of billiards in which the ~~player's~~ *player's* object is to strike the balls so that they, and perhaps other balls, shall fall into numbered holes that determine the score

**Project: N/A (A63F)**

- U A63F 5/00
  - U A63F 5/04
  - A63F 5/048
- Roulette games (aspects of games using an electronically generated display having two or more dimensions showing representations related to the game [A63F 13/00](#))**
- Disc roulettes; Dial roulettes; Teetotums; Dice-tops
  - • {with symbols viewable through holes or windows}

**Project: MP0124 (A63F)**

- U A63F 7/00
  - M A63F 7/06
- Indoor games using small moving playing bodies, e.g. balls, discs or blocks (board games, raffle games [A63F 3/00](#); roulette games [A63F 5/00](#); miniature bowling games [A63D 3/00](#); bagatelle or similar games [A63D 13/00](#); billiards, pocket billiards [A63D 15/00](#))**
- Games simulating outdoor ball games, e.g. hockey {*or football (or football if physically beneficial for the human body [A63B 67/00](#) if physically beneficial for the human body [A63B 67/00](#))*}

**Project: N/A (A63F)**

- A63F 7/0664
  - U A63F 9/00
  - U A63F 9/06
  - U A63F 9/08
- • {Electric}
- Games not otherwise provided for (aspects of games using an electronically generated display having two or more dimensions showing representations related to the game [A63F 13/00](#) {miscellaneous sporting games [A63B 67/00](#)})**
- Patience; Other games for self-amusement
  - • Puzzles provided with elements movable in relation, (i.e. movably connected), to each other

- A63F 9/0826
  - • {Three-dimensional puzzles with slidable or rotatable elements or groups of elements, the main configuration remaining unchanged, e.g. ~~Rubik's~~Rubik's cube (elements rotatable about just one axis, e.g. discs stacked as a cylinder [A63F 9/0811](#))}
- U A63F 9/0838
  - • • {with an element, e.g. invisible core, staying permanently in a central position having the function of central retaining spider and with groups of elements rotatable about at least three axes intersecting in one point}
- A63F 9/0842
  - • • • {each group consisting of again a central element and a plurality of additional elements rotatable about three orthogonal axes at both ends, the additional elements being rotatable about at least two axes, e.g. ~~Rubik's~~Rubik's cube}
- A63F 9/088
  - • {Puzzles with elements that are connected by straps, strings or hinges, e.g. ~~Rubik's~~Rubik's Magic}
- U A63F 9/24
  - {Electric games;} Games using electronic circuits not otherwise provided for {(video games [A63F 13/00](#), computers for game playing per se [G06F 19/00](#); computerized gaming systems [G07F 17/32](#))}
- U A63F 2009/2448
  - {Output devices}
- U A63F 2009/245
  - • {visual}
- U A63F 2009/2457
  - • • {Display screens, e.g. monitors, video displays}
- A63F 2009/2458
  - • • • {~~LCD's~~LCD's}
- U **A63F 2300/00**

**Features of games using an electronically generated display having two or more dimensions, e.g. on a television screen, showing representations related to the game**
- U A63F 2300/20
  - characterised by details of the game platform
- A63F 2300/206
  - • Game information storage, e.g. cartridges, CD ~~ROM's~~ROM's, ~~DVD's~~DVD's, smart cards

**Project: N/A (A63H)**

- U **A63H 3/00**

**Dolls {(puppets or marionettes for shows or theatres [A63J 19/006](#))}**

**NOTE**

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

  - "doll" includes a toy animal
- U A63H 3/36
  - Details; Accessories
- A63H 3/38
  - • Dolls` eyes
- A63H 3/44
  - • Dolls` hair or wigs; Eyelashes; Eyebrows (wigs, eyelashes, eyebrows for humans [A41G](#))
- A63H 3/52
  - • Dolls` houses, furniture, or other equipment {(simulating liquid flow [A63H 33/3022](#))}; Dolls` clothing (~~dolls` footwear~~A43B 3/28dolls' footwear [A43B 3/28](#))
- U **A63H 27/00**

**Toy aircraft; Other flying toys (toys with parachutes [A63H 33/20](#)); {Starting or launching devices therefor}**
- A63H 27/02
  - {Model aircraft}
- A63H 27/12
  - {Helicopters ([A63H 27/04](#) takes precedence); Flying tops}
- U **A63H 33/00**

**Other toys**
- U A63H 33/30
  - Imitations of miscellaneous apparatus not otherwise provided for, e.g. telephones, weighing-machines, cash-registers (savings boxes [A45C 1/12](#); toy ticket punches [G07B 9/02](#))
- A63H 33/3094
  - • {Doctors` instruments}

**Project: N/A (A63J)****U A63J 5/00****Auxiliaries for producing special effects on stages, or in circuses or arenas (illuminating arrangements therefor [F21S](#))**

U A63J 2005/001

- {enhancing the performance by involving senses complementary to sight or hearing}

A63J 2005/002

- {moving the ~~spectator`s~~[spectator's](#) body}

**Project: N/A (B)****B****PERFORMING OPERATIONS; TRANSPORTING**NOTES

1. The following notes are meant to assist in the use of {classes [B01](#) to [B09](#)}; they must not be read as modifying in any way the elaborations.

1. In this sub-section, the separation of different materials, e.g. of different matter, size, or state, is predominantly found in the following subclasses:

[B01D](#)[B03B](#), [B03C](#), [B03D](#)[B04B](#), [B04C](#)[B07B](#), [B07C](#)

2. The classifying characteristics of these subclasses are:

- the physical state of the matter to be separated
- the principle of the process used
- particular kinds of apparatus

The first of these characteristics involves six different aspects, assembled in three groups.

- a. liquid/liquid or liquid/gas and gas/gas
- b. solid/liquid or solid/gas
- c. solid/solid

3. These subclasses are to be used according to the following general rules:

- [B01D](#) is the most general class as far as separation other than solids from solids is concerned.
- Apparatus for separating solids from solids are covered by [B03B](#) when the process concerned is regarded as the equivalent of "washing" in the sense of the mining art, even if such apparatus is a pneumatic one, especially pneumatic tables or jigs. Screens PER SE are not covered by this subclass but are classified in [B07B](#), even if they are being used in a wet process. All other apparatus for the separation of solids from solids according to dry methods are classified in [B07B](#).
- If the separation takes place as a result of the detection or measurement of some feature of the material or articles to be sorted it is classified in [B07C](#).
- It should also be noted that the separation of isotopes of the same chemical element is covered by [B01D 59/00](#), whatever process or apparatus is employed.

2. The following scheme illustrates the classification according to these rules.

- a. [LIQUID/LIQUID](#)  
[LIQUID/GAS](#)  
[GAS/GAS](#)

*Subclasses  
dealing with  
Operations  
Apparatus*

*Method*

<i>General</i>		<u><i>B01D</i></u>
<u><i>B01D</i></u>		
<i>by centrifugal force, using centrifuges or free-vortex apparatus</i>		<u><i>B01D</i></u>
<u><i>B04B, B04C</i></u>		
<i>using magnetic or electrostatic effect</i>		<u><i>B03C</i></u>
<u><i>B03C</i></u>		
<b>LIQUID/LIQUID</b>		
<b>LIQUID/GAS</b>		
<b>GAS/GAS</b>		
<b>Subclasses dealing with</b>		
<b>Operations</b>	<b>Method</b>	<b>Apparatus</b>
<b>General</b>		<b>B01DB01D</b>
<b>by centrifugal force, using centrifuges or free-vortex apparatus</b>		<b>B01DB04B, B04C</b>
<b>using magnetic or electrostatic effect</b>		<b>B03CB03C</b>
<b>b. <i>SOLID/LIQUID</i></b>		
<i>SOLID/GAS</i>		
<i>Subclasses dealing with</i>		
<i>Operations</i>		<i>Method</i>
<i>Apparatus</i>		
<i>General</i>		<u><i>B01D</i></u>
<u><i>B01D</i></u>		
<i>by centrifugal force</i>		<u><i>B01D</i></u>
<u><i>B01D</i></u>		
<i>using centrifuges or free-vortex apparatus</i>		<u><i>B01D</i></u>
<u><i>B04B, B04C</i></u>		
<i>using magnetic or electrostatic effect</i>		<u><i>B03C</i></u>
<u><i>B03C</i></u>		
<b>SOLID/LIQUID</b>		
<b>SOLID/GAS</b>		
<b>Subclasses dealing with</b>		
<b>Operations</b>	<b>Method</b>	<b>Apparatus</b>
<b>General</b>		<b>B01DB01D</b>
<b>by centrifugal force</b>		<b>B01DB01D</b>
<b>using centrifuges or free-vortex apparatus</b>		<b>B01DB04B, B04C</b>
<b>using magnetic or electrostatic effect</b>		<b>B03CB03C</b>
<b>c. <i>SOLID/SOLID</i></b>		
<i>Dry Methods</i>		
<i>Subclasses dealing with</i>		
<i>Operations</i>		<i>Method</i>
<i>Apparatus</i>		
<i>General for material in bulk</i>		<u><i>B07B</i></u>
<u><i>B07B</i></u>		

Individual sorting	<u>B07C</u>
<u>B07C</u>	
Screening, sifting, pneumatic sorting	<u>B07B</u>
<u>B07B</u>	
using pneumatic tables or jigs	<u>B03B</u>
<u>B03B</u>	
by magnetic or electrostatic effect	<u>B03C</u>
<u>B03C</u>	
by centrifugal force	<u>B07B</u>
<u>B07B</u>	
using centrifuges or free-vortex apparatus	<u>B07B</u>
<u>B04B, B04C</u>	
Wet Methods	
Subclasses dealing with Operations	Method
Apparatus	
General	<u>B03B</u>
<u>B03B</u>	
flotation, differential sedimentation	<u>B03D</u>
<u>B03D</u>	
screening	<u>B07B</u>
<u>B07B</u>	
Combinations = dry methods - wet methods: <u>B03B</u>	
SOLID/SOLID	
Dry Methods	
Subclasses dealing with Operations	Method Apparatus
General for material in bulk	B07BB07B
Individual sorting	B07CB07C
Screening, sifting, pneumatic sorting	B07BB07B
using pneumatic tables or jigs	B03BB03B
by magnetic or electrostatic effect	B03CB03C
by centrifugal force	B07BB07B
using centrifuges or free-vortex apparatus	B07BB04B, B04C
Wet Methods	
Subclasses dealing with Operations	Method Apparatus
General	B03BB03B
flotation, differential sedimentation	B03DB03D
screening	B07BB07B
Combinations = dry methods - wet methods: B03B	

Project: N/A (B01D)

B01D

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

#### 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:

<del>B01D 19/0454</del>	<del>B01D 19/0454</del>	covered by	
<a href="#">B01D 9/00</a>			
<a href="#">B01D 15/04</a>	covered by	<a href="#">B01J 39/00</a>	to
<a href="#">B01J 49/02</a>			
<a href="#">B01D 17/022</a>	covered by		
<a href="#">B01D 17/0202</a>			
<a href="#">B01D 17/025</a>	covered by		
<a href="#">B01D 17/0208</a>			



<a href="#">B01D 17/028</a>	covered by	
<a href="#">B01D 17/0211</a>		
<a href="#">B01D 17/032</a>	covered by	
<a href="#">B01D 17/0214</a>		
<a href="#">B01D 17/035</a>	covered by	
<a href="#">B01D 17/0205</a>		
<a href="#">B01D 17/038</a>	covered by	
<a href="#">B01D 17/0217</a>		
<a href="#">B01D 17/05</a>	covered by	
<a href="#">B01D 17/047</a>		
<a href="#">B01D 17/09</a>	covered by	<a href="#">B01D 17/005</a>
<del>B01D 17/12</del> <a href="#">B01D 17/12</a>	covered by	
<a href="#">B01D 17/00</a>		
<a href="#">B01D 25/133</a>	covered by	<a href="#">B01D 25/285</a>
<a href="#">B01D 25/168</a>	covered by	<a href="#">B01D 25/285</a>
<del>B01D 25/21</del> <a href="#">B01D 25/21</a>	covered by	
<a href="#">B01D 25/164</a>		
<a href="#">B01D 29/075</a>	covered by	<a href="#">B01D 29/62</a> ,
<a href="#">B01D 29/76</a>		
<a href="#">B01D 29/37</a>	covered by	<a href="#">B01D 29/336</a> ,
<a href="#">B01D 29/356</a>		
<a href="#">B01D 33/052</a>	covered by	<a href="#">B01D 33/64</a>
<a href="#">B01D 35/01</a>	covered by	
<a href="#">B01D 36/001</a>		
<a href="#">B01D 61/26</a>	covered by	<a href="#">A61M 1/1656</a>
<a href="#">B01D 61/34</a>	covered by	<a href="#">A61M 1/16</a>

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

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.

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

NOTE

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

- B01D 17/08      • {Thickening liquid suspensions by filtration}
- B01D 17/10      • • {with stationary filtering elements}

- U B01D 21/00** Separation of suspended solid particles from liquids by sedimentation ({separation of ores or the like by sedimentation [B03B 5/48](#) to [B03B 5/60](#)}; differential sedimentation [B03D 3/00](#); {purification of water, waste water, sewage or sludge [C02F](#), e.g.} devices for separating or removing fatty or oily substances or similar floating material from water, waste water or sewage [C02F 1/40](#))

WARNING

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

- B01D 21/10      • {Settling tanks with multiple outlets for the separated liquids}
- B01D 21/12      • • {with moving scrapers}
- B01D 21/14      • • • {with rotating scrapers}
- B01D 21/16      • • {provided with flocculating compartments}

- U B01D 25/00** Filters formed by clamping together several filtering elements or parts of such elements (disc filters [B01D 29/39](#))

WARNING

See WARNING after subclass title, particularly items (7), (8), (12), (13) and (14)

- B01D 25/08      • {with rigid self-supporting filtering elements}
- B01D 25/16      • {Edge filtering elements, i.e. using contiguous impervious surfaces}
- B01D 25/18      • • {of flat, stacked bodies}

- 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)}**

WARNING

See WARNING after subclass title, particularly items (7), (8), (9), (10), (12) and (14)

- U B01D 29/0002** • {Aspects of other filters with filtering elements stationary during filtration, or of filtering elements thereof}
- B01D 29/0072** • • {Filters integrally combined with devices for controlling the filtration (for shutting-off elements or changing over from one element to another [B01D 35/12](#), [B01D 35/14](#); controlling filtration processes [B01D 37/04](#))}

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

NOTE

In groups [B01D 61/00](#) to [B01D 61/58](#) it is desirable to add the indexing codes relating to process operations and control chosen from groups [B01D 2311/00](#) to [B01D 2311/2696](#),  
to details relating to membrane modules and apparatus indexing codes chosen from [B01D 2313/00](#) to [B01D 2313/90](#),  
to details relating to the membrane module operation indexing codes chosen from [B01D 2315/00](#) to [B01D 2315/16](#),  
to details relating to the module arrangement within a plant or an apparatus indexing codes chosen from [B01D 2317/00](#) to [B01D 2317/08](#) and  
to details relating to the membrane assembly within one housing indexing codes chosen from [B01D 2319/00](#) to [B01D 2319/06](#)

- U B01D 61/24** • Dialysis; {Membrane extraction (dialysate solution flow [A61M 1/1656](#))}
- B01D 61/243** • • {Dialysis}
- B01D 61/246** • • {Membrane extraction}

- U B01D 2257/00** **Components to be removed**

- U B01D 2257/70** • Organic compounds not provided for in groups [B01D 2257/00](#) to [B01D 2257/602](#)
- B01D 2257/708** • • Volatile organic compounds V.O.C.'s

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

- U B01F 3/00** **Mixing, e.g. dispersing, emulsifying, according to the phases to be mixed {(C08J 3/02 takes precedence)}**

**B01F 3/04** • gases or vapours with liquids (mixing non-alcoholic beverages with gases [A23L 2/54](#); {for medical purposes [A61M 16/14](#)}) ~~{M1110}~~

- U B01F 3/04099** • • {Introducing a gas or vapour into a liquid medium, e.g. producing aerated liquids (methods for the preparation of non-alcoholic beverages, e.g. of carbonated water [A23L 2/00](#); bottling liquids, e.g. combined with aerating or carbonating [B67C 3/00](#); dispensing beverages on draught combined with carbonating [B67D 1/0057](#), [B67D 1/025](#), [B67D 1/0406](#), [B67D 1/0418](#); dispensing beverages by gas pressure from storage containers, e.g. syphons [B67D 1/04](#); biological treatment of water, waste water or sewage [C02F 3/00](#); impregnating wine with carbon dioxide [C12G 1/06](#); gas introduction means for enzymology or microbiology apparatus [C12M 1/04](#))}

- U B01F 3/04531
  - • • {using driven stirrers with completely immersed stirring elements (B01F 3/04453 takes precedence; surface aerating with stirrers near to the surface B01F 3/04765; flotation machines B03D 1/16)}
- B01F 3/04539
  - • • • {characterised by the introduction of the gas along the axis of the stirrer or along the stirrer elements}
- U B01F 3/04829
  - • • {Parts; Accessories}
- B01F 3/04836
  - • • • {Mixing receptacles, e.g. tanks, vessels, reactors, being completely closed, e.g. hermetically closed}
- U B01F 5/00
 

**Flow mixers (sprayers, atomisers B05B); Mixers for falling materials, e.g. solid particles (B01F 13/04 takes precedence; centrifugal mixers B04)**
- U B01F 5/26
  - Falling-particle mixers with moving {or vibrating} means, e.g. stirrers, for increasing the mixing {(B01F 5/24 takes precedence)}
- B01F 5/265
  - • {using one central conveyor or several separate conveyors, e.g. belt or screw conveyors, vibrating tables, for discharging flows from receptacles, e.g. in layers}

**Project: MP0124 (B01F)**

- U B01F 2215/00
 

**Auxiliary or complementary information in relation with mixing**
- U B01F 2215/0001
  - Field of application of the mixing device
- M B01F 2215/0029
  - • Mixing ingredients for bone cement (~~tools for mixing bone cement A61B 17/8802~~ *equipment for handling bone cement A61B 17/8802*)

**Project: MP0123 (B01L)****B01L**

**CHEMICAL OR PHYSICAL LABORATORY APPARATUS FOR GENERAL USE** (apparatus for medical or pharmaceutical purposes A61; apparatus for industrial purposes or laboratory apparatus whose construction and performance are comparable to that of similar industrial apparatus, see the relevant classes for industrial apparatus, particularly subclasses of B01 and C12; separating or distilling apparatus B01D; mixing or stirring devices B01F; atomisers B05B; {vibrating devices, e.g. shaking tables,} sieves B07B; corks, bungs B65D; handling liquids in general B67; vacuum pumps F04; siphons F04F 10/00; taps, stop-cocks F16K; tubes, tube joints F16L; apparatus specially adapted for investigating or analysing materials G01, particularly G01N; electrical or optical apparatus, see the relevant classes in Sections G and H)

NOTE

This subclass covers only laboratory apparatus which is either applicable solely to laboratory purposes or which, by reason of its simple construction and adaptability, is such as would not be suitable for industrial use.

WARNING

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

- ~~B01L 3/14~~ *B01L 3/14* covered by B01L 3/50

2. Groups B01L 1/50, B01L 3/50-B01L 3/569, B01L 7/50-B01L 7/54, B01L 9/50-B01L 9/547 do not correspond to former or future IPC groups:

Concordance CPC : IPC for these groups is as follows:

- B01L 1/50 : B01L 1/00 - B01L 3/50 - B01L 3/502 : B01L 3/00 - B01L 3/5021 - B01L 3/50215 : B01L 3/14 - B01L 3/5023 - B01L 3/508 : B01L 3/00 - B01L 3/5082 - B01L 3/50825 : B01L 3/14 - B01L 3/5085 - B01L 3/569 : B01L 3/00 - B01L 7/50 - B01L 7/54 : B01L 7/00 - B01L 9/50 - B01L 9/547 : B01L 9/00

**Project: N/A (B01L)**

- U B01L 3/00** Containers or dishes for laboratory use, e.g. laboratory glassware (bottles [B65D](#); apparatus for enzymology or microbiology {specially adapted for culturing} [C12M 1/00](#)); Droppers (receptacles for volumetric purposes [G01F](#))
- U B01L 3/50** • {Containers for the purpose of retaining a material to be analysed, e.g. test tubes (devices for taking samples of blood [A61B 5/14](#))}
- U B01L 3/502** • • {with fluid transport, e.g. in multi-compartment structures (centrifugal-type cuvettes [G01N 21/07](#); analysis by separation into components [G01N 30/00](#); automatic analysers [G01N 35/00](#))}
- U B01L 3/5027** • • • {by integrated micro-fluidic structures, i.e. dimensions of channels and chambers are such that surface tension forces are important, e.g. lab-on-a-chip ([B01L 3/5023](#) takes precedence; micromixers [B01F 13/0059](#); microreactors for synthesis [B01J 19/0093](#); micro-capillary devices in general [B81B 1/00](#))}
- B01L 3/502707** • • • {characterised by the manufacture of the container or its components (manufacture of micro-structural devices in general [B81C](#); by shaping or joining plastic parts [B29C 59/00](#) [B29C 65/00](#), by laminating [B32B 37/00](#))}

**Project: MP0124 (B03C)**

- U B03C 2201/00** Details of magnetic or electrostatic separation
- M B03C 2201/18** • *Magnetic separation whereby* the particles *beingare* suspended in a liquid
- M B03C 2201/20** • *Magnetic separation whereby* the particles to be separated *beingare* in solid form

**Project: MP0123 (B05B)**

- M B05B** SPRAYING APPARATUS; ATOMISING APPARATUS; NOZZLES ({sprayers or atomisers specially adapted for therapeutic purposes [A61M 11/00](#)}; spray-mixers with nozzles [B01F 5/20](#); processes for applying liquids or other fluent materials to surfaces by spraying [B05D](#); {nozzles specially adapted for injection moulding of plastics or substances in a plastic state [B29C 45/1603](#), [B29C 45/20](#); nozzles specially adapted for windscreen washers [B60S 1/52](#)}; means for pumping fluids [F04](#); valves, e.g. water-taps, [F16K](#))

NOTES

1. This subclass covers particularly apparatus for the release or projection of drops or droplets into the atmosphere or into a chamber to form a mist or the like. For this purpose, the materials to be projected may be suspended in a stream of gas or vapour.
2. Attention is drawn to the Note following the title of class [B05](#).
3. In this subclass, "means for controlling volume of flow" is used in the most general meaning and includes also means allowing only starting and stopping the flow
4. In this subclass, the meaning of the expression "apparatus carried on or by a person" includes all apparatus comprising at least one container for the material to be sprayed carried on or by a person during use
5. In this subclass, the word "container" is to be understood as the innermost enclosure containing the material to be sprayed

WARNING

Groups B05B 11/30 to B05B 11/3098 do not correspond to former or current IPC groups. The concordance CPC : IPC for these groups is as follows:-  
B05B 11/30 -- B05B 11/3098 : B05B 11/00

**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 7/16** • incorporating means for heating {or cooling} the material to be sprayed {(spraying by means of explosions [B05B 7/0006](#))}
- B05B 7/1693** • • {with means for heating the material to be sprayed or an atomizing fluid in a supply hose or the like}}
- U B05B 11/00** Single-unit, i.e. unitary, hand-held apparatus {comprising a container and a discharge nozzle attached thereto}, in which flow of liquid or other fluent material is produced by {the muscular energy of} the operator at the moment of use {or by an equivalent manipulator independent from the apparatus (apparatus with an external source or the possibility of permanent accumulation of pressure for discharging the liquid or fluid material [B05B 7/00](#), [B05B 9/00](#))}
- B05B 11/30** • {the flow being effected by a pump}
- U B05B 12/00** Arrangements or special adaptations of delivery controlling means in spraying systems (controlling in general [G05](#) {; valves in spray head or nozzles [B05B 1/30](#) and sub-groups })
- U B05B 12/004** • {comprising sensors for monitoring the delivery, e.g. by displaying the sensed value or generating an alarm ([B05B 12/08](#) takes precedence; Registering or indicating the condition or the working of machines or other apparatus in general [G07C 3/00](#))}
- B05B 12/006** • • {Pressure or flow rate sensors}}
- WARNING  
not complete, see [B05B 12/004](#)
- U B05B 12/14** • for supplying a selected one of a plurality of liquids or other fluent materials {or several in selected proportions} to a {spray apparatus, e.g. to a} single spray outlet
- U B05B 12/1418** • • {for supplying several liquids or other fluent materials in selected proportions to a single spray outlet (Controlling ratio of two or more flows of fluid [G05D 11/02](#))}
- WARNING  
not complete, see also [B05B 12/14](#)
- B05B 12/1427** • • • {a condition of a first liquid or other fluent material in a first supply line controlling a condition of a second one in a second supply line}{WARNING not complete, see [B05B 7/32](#), [B05B 12/14](#)}
- WARNING  
1. not complete, see also [B05B 12/14](#)  
2. not complete, see [B05B 7/32](#), [B05B 12/14](#)



B05B 12/1436

- • • {the controlling condition of the first liquid or other fluent material in the first supply line being its flow rate or its pressure}~~{WARNING not complete, see B05B 7/32, B05B 12/14}~~

WARNING1. not complete, see also [B05B 12/14](#)2. *WARNING not complete, see [B05B 7/32](#), [B05B 12/14](#)***Project: N/A (B05C)**

U B05C 17/00

Hand tools or apparatus using hand held tools, for applying liquids or other fluent materials to, for spreading applied liquids or other fluent materials on, or for partially removing applied liquids or other fluent materials from, surfaces ({casings or accessories for storing or handling solid or pasty toilet or cosmetic substances [A45D 40/00](#);} brushes [A46B](#); {shoe polish applicators [A47L 23/05](#); surgical glue applicators [A61B 17/00491](#);} absorbent pads, e.g. swabs, for applying media to the human body [A61F 13/15](#); {hand-held applicators for applying or spreading media, e.g. remedies, on the human body [A61M 35/003](#); implements for writing or drawing [B43K](#); hand-held desk devices for applying liquid, e.g. adhesive, by contact to surfaces [B43M 11/06](#);} implements or apparatus for removing dry paint from surfaces [B44D 3/16](#) {; container closures with pads or like contents-applying means [B65D 47/42](#)})

U B05C 17/005

- {for discharging material from a reservoir or container located in or on the hand tool through an outlet orifice by pressure without using surface contacting members like pads or brushes}

U B05C 17/01

- • with {manually} mechanically or electrically actuated piston or the like {{[B05C 17/00533](#) takes precedence}}

B05C 17/0103

- • • {with electrically actuated piston or the like}

**Project: MP0123 (B05D)**

B05D 1/00

Processes for applying liquids or other fluent materials ([B05D 5/00](#), [B05D 7/00](#) take precedence)

WARNING

Groups B05D-1/60 to B05D-1/62 do not correspond to former or current IPC groups. Concordance CPC : IPC for those groups is as follows – B05D-1/60 to B05D-1/62 : B05D-1/00, B05D-7/00

B05D 3/00

Pretreatment of surfaces to which liquids or other fluent materials are to be applied; After-treatment of applied coatings, e.g. intermediate treating of an applied coating preparatory to subsequent applications of liquids or other fluent materials (successively applying liquids or other fluent materials [B05D 1/36](#); drying ovens [F26B](#))

WARNING

Groups B05D-3/20 to B05D-3/207 do not correspond to former or current IPC groups. Concordance CPC : IPC for those groups is as follows – B05D-3/20 – B05D-3/207 : B05D-3/00

**B05D 7/00**


Processes, other than flocking, specially adapted for applying liquids or other fluent materials to particular surfaces or for applying particular liquids or other fluent materials {(coating of foodstuffs [A23P 1/084](#), [A23P 1/085](#))}

**WARNING**

Groups B05D 7/50 to B05D 7/5885 do not correspond to former or current IPC groups. Concordance CPC : IPC for those groups is as follows – B05D 7/50 to B05D 7/5885 : B05D 7/00

**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 1/06      • • operating with piezo-electric effect or with electrostriction (piezo-electric or electrostrictive devices per se [H01L 41/00](#))
- U B06B 1/0607    • • • {using multiple elements ([B06B 1/064](#) and [B06B 1/0688](#) take precedence)}
- U B06B 1/0611    • • • • {in a pile}
- B06B 1/0618    • • • • • {of piezo- and non-piezo-electric elements, e.g. 

**Project: RP0117 (B08B)****B08B**

**CLEANING IN GENERAL; PREVENTION OF FOULING IN GENERAL** (brushes [A46](#); devices for domestic or like cleaning [A47L](#); {cleaning golf-clubs or golf accessories ~~[A63B 57/0087](#)~~ [A63B 57/60](#); cleaning grips of bats on rackets ~~[A63B 59/0062](#)~~ [A63B 60/36](#)} ; separation of particles from liquids or gases [B01D](#); separation of solids [B03](#), [B07](#); spraying or applying liquids or other fluent materials to surfaces in general [B05](#); cleaning devices for conveyers [B65G 45/10](#); concurrent cleaning, filling and closing of bottles [B67C 7/00](#); inhibiting corrosion or incrustation in general [C23](#); cleaning streets, permanent ways, beaches or land [E01H](#); parts, details or accessories of swimming or splash baths or pools, specially adapted for cleaning [E04H 4/16](#); preventing or removing electrostatic charges [H05F](#))

**NOTE**

This subclass covers only inventions relating to cleaning which are usually classified according to one (or more) of the aspects mentioned below if they are not fully classifiable in a subclass a subclass providing for any of the following aspects:

- the articles cleaned, e.g. bed-pans, urinal or other sanitary devices for bed-ridden persons [A61G 9/02](#), filters, semi-permeable membranes [B01D](#), castings and moulds [B22D 29/00](#), vehicles [B60S](#), coke ovens [C10B 43/00](#), building forms [E04G](#), boilers [F22](#), combustion apparatus [F23](#), furnaces [F27](#); the general nature of the cleaning, e.g. preparing for sugar manufacture [A23N](#), domestic cleaning [A47L](#), treatment of textiles [D06](#), laundry [D06F](#), air-conditioning [F24F](#);
- the particular operation performed, e.g. filtering [B01D](#), separating of solids [B03](#), [B07](#), sand-blasting [B24C](#);
- the particular apparatus or device, e.g. brushes [A46B](#), mops [A47L](#), centrifuges [B04](#), hand tools [B25](#)-{ devices for cleaning paint-applying hand tools after use [B44D 3/006](#)} ;
- the substance cleaned, e.g. metals [B21C](#), [C23](#), water [C02](#), glass [C03B](#), leather [C14B](#), textile fibres [D01](#);
- the substance removed (or prevented from depositing or forming) e.g. { removing paint [B44D 3/00](#), e.g. } implements or apparatus for removing dry paint from surfaces [B44D 3/16](#);
- chemical paint-removers [C09D 9/00](#);

preventing rust [C23F](#);  
the substance used, e.g. macromolecular compounds or compositions [C08](#), anti-icing materials [C09K](#), detergents [C11D](#);  
the operation in connection with which cleaning is done, e.g. metal rolling [B21B](#), metal boring [B23B](#), soldering [B23K](#), textile fabrication [D01G](#), [D01H](#), [D03J](#), [D04B](#);  
the surroundings of a surface to be cleaned or kept clean, e.g. water in a boiler [C02F](#), air in a room [F24F](#).

**Project: MP0124 (B09)**

**M B09**

**DISPOSAL OF SOLID WASTE; RECLAMATION OF CONTAMINATED SOIL**  
**[SOIL](#) {(treatment of waste water, sewage or sludge [C02F](#); treating**  
**radioactively contaminated solids [G21F 9/28](#))}**

**Project: N/A (B09B)**



**B09B**

**DISPOSAL OF SOLID WASTE**

**NOTES**

1. This subclass covers only single or combined, e.g. multistage, operations not fully classifiable in a single other subclass
2. In this subclass the following terms or expressions are added with the meanings indicated :
  - "disposal" means the discarding, e.g. dumping, or destroying of waste or its transformation into something useful or harmless;
  - "solid waste" includes waste which, although it has liquid content, is for practical purposes handled as solid
3. Attention is drawn to the following places:

[A23J 1/16](#) Obtaining proteins from waste water of starch manufacturing plants of like wastes

[A23K 1/06](#) Animal feeding-stuffs from distillers- or brewers- waste

[A23K 1/08](#) Animal feeding-stuffs from waste products of dairy plants

[A23K 1/10](#) Animal feeding-stuffs from kitchen waste

[A43B 1/12](#) Footwear made of rubber waste

[A61L 11/00](#) Disinfection or sterilisation methods specially adapted for refuse

[A62D 3/00](#) Chemical means for combatting harmful chemical agents; processes for making harmful chemical agents harmless

[B01D 53/34](#) Chemical purification of smoke or fumes, e.g. flue gas

[B02C 18/0084](#) Disintegrating by knives or other cutting or tearing members, which chop material into fragments, specially adapted for disintegrating garbage, waste or sewage

[B03B 7/00](#) Combinations of wet processes or apparatus with other processes or apparatus, e.g. for dressing ores or garbage

[B03B 9/06](#) General arrangement of separating plant, e.g. flow sheets, specially adapted for refuse

[B05B 15/04](#) Control of spray area of spraying plant, e.g. masking, side shields; Means for collection or re-use of excess material

[B08B 15/00](#) Prevent escape of dirt or fumes from the area where they are produced; Collecting or removing dirt or fumes from that area

[B23D 25/14](#) Machines or arrangements for shearing stock

while the latter is travelling otherwise than in the direction of the cut without regard to the exact dimensions of the resulting material, e.g. for cutting up scrap

[B27B 33/20](#) Edge trimming saw blades or tools combined with means to disintegrate waste

[B29B 17/00](#) Recovery of plastics or other constituents of waste material containing plastics

[B30B 9/32](#) Presses for consolidating scrap metal or for compacting used cars

[B63B 17/06](#) Refuse discharge from vessels, e.g. for ash  
{[B63J 4/006](#)} Arrangements of installation for treating waste water or sewage on vessels

[B65F 1/00](#) Refuse receptacles

[B65F 3/00](#) Vehicles particularly adapted for collecting refuse

[B65F 5/00](#) Gathering or removal of refuse otherwise than by receptacles or vehicles

[B65F 7/00](#) Cleaning or disinfecting devices combined with refuse receptacles or refuse vehicles

[C03C 1/00](#) Ingredients generally applicable to manufacture of glasses, glazes or vitreous enamels

[C04B 7/24](#) Hydraulic cements from oil shales, residues or waste other than slag

[C04B 11/26](#) Calcium sulfate cements from phosphogypsum or from waste, e.g. purification products of smoke

[C04B 18/04](#) Waste materials or refuse used as fillers for mortars, concrete, artificial stone or the like

[C04B 22/0006](#) Waste inorganic materials used as active ingredients for mortars, concrete, artificial stone or the like

[C04B 24/001](#) Waste organic materials used as active ingredients for mortars, concrete, artificial stone or the like

[C05F 9/00](#) Fertilisers made from household or town refuse

[C08J 11/00](#) Recovery of waste materials of macromolecular substances

[C08L 17/00](#) Compositions of reclaimed rubber

[C10B 53/00](#) Destructive distillation, specially adapted for particular solid raw materials or solid raw materials in special form

[C10B 57/00](#) Other processes not covered before; Features of destructive distillation processes in general

[C10G 1/10](#) Production of liquid hydrocarbon mixtures from rubber or rubber waste

[C10L 5/46](#) Solid fuels essentially based on sewage, house or town refuse

[C10L 5/48](#) Solid fuels essentially based on industrial residues and waste materials

[C10M 175/02](#) Working-up used lubricants based on mineral oils

[C11B 13/00](#) Recovery of fats, fatty oils, or fatty acids from waste materials

[C11D 19/00](#) Recovery of glycerol from a saponification liquor

[C12F 3/00](#) Recovery of by-products

[C12F 3/08](#) Recovery of alcohol from press residues or other waste material

[C12P 7/08](#) Biochemical production of ethanol from waste

[C22B 7/00](#) Working-up raw materials other than ores, e.g.

scrap, to produce non-ferrous metals or compounds thereof  
[C22B 19/28](#) Obtaining zinc or zinc oxide from muffle furnace residues  
[C22B 19/30](#) Obtaining zinc or zinc oxide from metallic residues or scrap  
[C22B 25/06](#) Obtaining tin from scrap  
[D01B](#) Mechanical treatment of natural fibrous or filamentary material to obtain fibres or filaments, e.g. for spinning  
[D01C 5/00](#) Carbonising rags to recover animal fibres  
[D01F 13/00](#) Recovery of starting material, waste material or solvents during the manufacture of artificial filaments or the like  
[D01G 11/00](#) Disintegrating fibre-containing articles to obtain fibres for re-use  
[D01H 11/00](#) Arrangements for confining or removing dust, fly, or the like  
[D06L 1/10](#) Regeneration of used chemical baths used for dry-cleaning or washing fibres, fabrics or the like  
[D21B 1/08](#) Dry treatment of waste paper or rags for making paper or for the production of cellulose  
[D21B 1/32](#) Defibrating waste paper  
[D21C 5/02](#) Processes for obtaining cellulose by working-up waste paper  
[D21C 11/14](#) Regeneration of pulp liquors by wet combustion  
[D21F 1/66](#) Re-use of pulp-water in wet end machines for making continuous webs of paper  
[D21H 17/01](#) Waste products added to the pulp or used in paper-impregnating material  
[E03F](#) Sewers, Cesspools  
[E04F 17/10](#) Arrangements in building for the disposal of refuse  
[F23B 5/00](#) Combustion apparatus arrangements for burning uncombusted material from primary combustion  
[F23G](#) Consuming waste products by combustion  
[F23J](#) Removal or treatment of combustion products or combustion residues  
[G03C 11/24](#) Removing emulsion from waste photographic material  
[H01B 15/00](#) Apparatus or processes for salvaging material from electric cables  
[H01M 6/52](#) Reclaiming serviceable parts of waste cells or batteries  
[H01M 10/54](#) Reclaiming serviceable parts of waste accumulators

## Project: N/A (B21B)

- |  |  |
|--|--|
| <p><b>U</b> B21B 35/00</p> <p>U B21B 35/14</p> <p>U B21B 35/142</p> <p>B21B 35/145</p> | <p><b>Drives for metal-rolling mills, {e.g. hydraulic drives}</b></p> <ul style="list-style-type: none"> <li>• Couplings, driving spindles, or spindle carriers specially adapted for, or specially arranged in, metal-rolling mills (couplings or shafts in general <a href="#">F16</a>)</li> <li>• • {Yielding spindle couplings; Universal joints for spindles (yielding couplings in general <a href="#">F16D 3/00</a>)}</li> <li>• • • {<del>Hooke's</del><a href="#">Hooke's</a> joints or the like with each coupling part pivoted with respect to an intermediate member (<del>Hooke's joints in general</del> <a href="#">F16D 3/26</a><a href="#">Hooke's joints in general</a> <a href="#">F16D 3/26</a>)}</li> </ul> |
|--|--|

**Project: N/A (B21D)**

- U B21D 53/00 Making other particular articles (making wire fabrics [B21F](#); making chains or chain parts [B21L](#))
- B21D 53/38 · ~~locksmith's~~[locksmith's](#) goods, e.g. handles

**Project: N/A (B21K)**

B21K 13/00 Making locksmiths' goods, e.g. handles for cases

B21K 15/00 Making blacksmiths' goods

**Project: N/A (B22D)**

- U B22D 7/00 Casting ingots, {e.g. from ferrous metals}(equipment for conveying molten metal [B22D 35/00](#)).
- U B22D 7/06 · Ingot moulds or their manufacture
- B22D 7/10 · · Hot tops therefor {(heating the top discard of ingots [B22D 27/06](#))}~~06J~~

**Project: N/A (B23K)**

B23K 26/00 Working by laser beam, e.g. welding, cutting, ~~boring~~ or ~~boring~~(lasers per se [H01S 3/00](#); {laser assisted deposition [G23C](#); laser inspection or alignment [G01B](#); laser sintering of metallic powder [B22F 3/105](#), of plastics [B29C 67/00](#), of glass [C03B 19/06](#), of ceramics [C04B 35/64](#); applying identification marks by laser [B41M 5/24](#)})

**NOTES****1. This subclass covers:**

- laser working for making a weakened layer, with or without removing material;
- laser shock processing;
- apparatus for laser surface treatment;
- laser ablation.

**2. This subclass does not cover:**

- laser assisted deposition which is covered by subclass [C23C](#);
- laser sintering which is covered by group [B22F 3/105](#) for metallic powder, by group [B29C 67/04](#) for plastics, by group [C03B 19/06](#) for glass or by group [C04B 35/64](#) for ceramics;
- laser assisted chemical etching which is covered by group [C23F 1/00](#).

**WARNING**

Group [B23K 26/00](#) is impacted by reclassification into groups [B23K 26/346](#) – [B23K 26/348](#), [B23K 26/352](#) – [B23K 26/359](#) and [B23K 26/50](#) – [B23K 26/57](#). All groups listed in this Warning should be considered in order to perform a complete search.

- D B23K 26/0003 · {Trimming, tuning}
- B23K 26/0006 · {taking account of the properties of the material involved (~~B23K 26/20~~[B23K 26/32](#), ~~B23K 26/36~~[B23K 26/40](#) take precedence)}
- D B23K 26/0009 · · {Metallic material}
- D B23K 26/0012 · · · {Non-ferrous metals or alloys}
- D B23K 26/0015 · · · · {Refractory metals}
- D B23K 26/0018 · · · · {Light metals}
- D B23K 26/0021 · · {Non-metallic material (laser surface treatment of glass not in the form of fibres or filaments [C03C 23/0025](#), of glass in the form of fibres or filaments [C03C 25/6233](#))}
- D B23K 26/0024 · · · {Organic material}









- D B23K 26/0027
  - • • {Material from living organisms, e.g. skin (surgical instruments, devices or methods for applying laser energy to the body A61B 18/20; dental laser A61C 1/0046; eye surgery using laser A61F 9/008)}
- D B23K 26/003
  - • • {Fabrics}
- D B23K 26/0033
  - • • {Paper}
- D B23K 26/0036
  - • • {Plastics}
- D B23K 26/0039
  - • • {Inorganic material}
- D B23K 26/0042
  - • • {Semiconductor material, e.g. Si or Ge based}
- D B23K 26/0045
  - • • {Ceramics}
- D B23K 26/0048
  - {Composite material, e.g. fibre reinforced, sandwich steel plate}
- D B23K 26/0051
  - {Surface-treated material, e.g. plated, painted}
- B23K 26/009
  - {using a non-absorbing, e.g. transparent, reflective or refractive, layer on the workpiece (using a mask on the workpiece [B23K 26/0661](#) [B23K 26/066](#))}
- B23K 26/0093
  - {combined with mechanical machining or metal-working covered by other subclasses than [B23K](#) (~~combined with an electric arc [B23K 26/1429](#)~~; combined welding or cutting procedures or apparatus [B23K 28/02](#)); Heating a metal workpiece by laser during machining [B23P 25/006](#)}
- B23K 26/02
  - Positioning or observing the workpiece, e.g. with respect to the point of impact; Aligning, aiming or focusing the laser beam

**WARNING**  
 Group [B23K 26/02](#) is incomplete pending reclassification of documents from group [B23K 26/037](#).  
 Groups [B23K 26/02](#) and [B23K 26/037](#) should be considered in order to perform a complete search.
- D B23K 26/023
  - {Aligning, aiming or focussing the laser beam by pressing on the workpiece, e.g. pressing roller foot}
- D B23K 26/026
  - {Aligning the laser beam (B23K 26/023 takes precedence; automatically aligning the laser beam [B23K 26/041](#))}
- B23K 26/03
  - Observing, {e.g. monitoring,} the workpiece ~~{(protective devices for the eye, carried on the body or in the hand [A61F 9/02](#), [A61F 9/04](#))}~~
- B23K 26/034
  - • {Observing [the](#) temperature of the workpiece}
- N B23K 26/0342
  - • {Observing magnetic fields related to the workpiece}
- N B23K 26/0344
  - • {Observing the speed of the workpiece}
- N B23K 26/035
  - Aligning the laser beam (automatically [B23K 26/042](#))
- D B23K 26/036
  - • {Observing magnetic field related to the workpiece}
- N B23K 26/037
  - • {by pressing on the workpiece, e.g. pressing roller foot}

**WARNING**  
 Group [B23K 26/037](#) is impacted by reclassification into group [B23K 26/02](#). Groups [B23K 26/037](#) and [B23K 26/02](#) should be considered in order to perform a complete search.
- D B23K 26/038
  - • {Observing speed of the workpiece}
- U B23K 26/04
  - Automatically aligning, aiming or focusing the laser beam, e.g. using the back-scattered light
- D B23K 26/041
  - • {Automatically aligning the laser beam}
- N B23K 26/042
  - • Automatically aligning the laser beam
- U B23K 26/043
  - • • {along the beam path, i.e. alignment of laser beam axis relative to laser beam apparatus}
- N B23K 26/044
  - • Seam tracking

- D B23K 26/045      . . . {for tracking lines during welding or cutting, e.g. seam tracking}
- B23K 26/046      . . . {Automatically focusing the laser beam}
- B23K 26/06      . . . Shaping the laser beam, e.g. by masks or multi-focusing ~~(optical elements, systems, or apparatus, in general G02B- (beam-shaping for applications of laser not covered in this group H01S 3/005))~~
- WARNING**  
Group B23K 26/06 is impacted by reclassification into group B23K 26/062. Groups B23K 26/06 and B23K 26/062 should be considered in order to perform a complete search.
- U B23K 26/0604      . . . {by a combination of beams}
- B23K 26/0608      . . . {in the same heat affected zone [HAZ] (B23K 26/0613, ~~B23K 26/0621~~ B23K 26/0619 take precedence)}
- B23K 26/0613      . . . {having a common axis (~~B23K 26/0621~~ B23K 26/0619 takes precedence)}
- N B23K 26/0619      . . . {with spots located on opposed surfaces of the workpiece}
- N B23K 26/062      . . . by direct control of the laser beam
- WARNING**  
Group B23K 26/062 is incomplete pending reclassification of documents from group B23K 26/06. Groups B23K 26/06 and B23K 26/062 should be considered in order to perform a complete search.
- D B23K 26/0621      . . . {with spots located on opposed surfaces of the workpiece}
- N B23K 26/0622      . . . by shaping pulses
- N B23K 26/0624      . . . {using ultrashort pulses, i.e. pulses of 1ns or less}
- B23K 26/0626      . . . {Energy control of the laser beam (~~temporal shaping of laser beam H01S 3/0057~~ B23K 26/0622 takes precedence)}
- D B23K 26/063      . . . {Pulse shaping}
- D B23K 26/0635      . . . {using ultrashort pulses, i.e. pulses of 1ns or less}
- D B23K 26/0639      . . . {by means of optical elements}
- N B23K 26/064      . . . by means of optical elements, e.g. lenses, mirrors or prisms
- U B23K 26/0643      . . . {comprising mirrors}
- U B23K 26/0648      . . . {comprising lenses}
- U B23K 26/0652      . . . {comprising prisms}
- D B23K 26/0656      . . . {comprising a mask (for lithography G03F)}
- N B23K 26/066      . . . by using masks
- U B23K 26/0661      . . . {disposed on the workpiece}
- U B23K 26/08      . Devices involving relative movement between laser beam and workpiece
- D B23K 26/0807      . {Devices involving movement of the laser beam relative to the laser head, i.e. scanning devices}
- D B23K 26/0815      . . . {using multifaceted mirrors, e.g. polygonal mirror (scanning devices using multifaceted mirrors, in general G02B 26/12)}
- N B23K 26/082      . Scanning systems, i.e. devices involving movement of the laser beam relative to the laser head
- N B23K 26/0821      . . . {using multifaceted mirrors, e.g. polygonal mirror}
- U B23K 26/12      . in a special atmosphere, e.g. in an enclosure
- D B23K 26/121      . {in a liquid, e.g. underwater}
- B23K 26/122      . {in ~~vacuum~~ a liquid, e.g. underwater}

- N B23K 26/1224
- B23K 26/126
- {in vacuum}
  - {in an atmosphere of gases chemically reacting with the workpiece ~~(chemical etching of glass C03C 15/00; C03C 25/68; chemical etching of metallic material C23F 1/00; etching of crystallised non-metallic material with defined structure in gas atmosphere C30B 33/12)}~~}
- B23K 26/14
- using a ~~flow~~**fluid stream**, e.g. a jet of gas, in conjunction with the laser beam; ~~{Nozzles therefor}~~ (B23K 26/12 takes precedence)
- D B23K 26/1405
- {for the removal of by-products, e.g. by aspiration}
- D B23K 26/1411
- {the flow containing particles, e.g. powder}
- D B23K 26/1417
- {the flow containing a liquid}
- N B23K 26/142
- for the removal of by-products
- U B23K 26/1435
- {involving specially adapted flow control means}
- N B23K 26/1436
- • {for pressure control}
- N B23K 26/1437
- • {for flow rate control}
- N B23K 26/1438
- • {for directional control}
- N B23K 26/144
- the fluid stream containing particles, e.g. powder
- D B23K 26/1441
- • {for pressure control}
- D B23K 26/1447
- • {for debit control}
- D B23K 26/1452
- • {for directional control}
- D B23K 26/1458
- {Nozzles; Features related to nozzles}
- N B23K 26/146
- the fluid stream containing a liquid
- N B23K 26/1462
- {Nozzles; Features related to nozzles}
- U B23K 26/1464
- • {Supply to, or discharge from, nozzles of media, e.g. gas, powder, wire}
- B23K 26/147
- • • {Features outside the nozzle for feeding ~~media~~**the fluid stream** towards the workpiece}
- B23K 26/1476
- • • {Features inside the nozzle for feeding ~~media~~**the fluid stream** through the nozzle}
- B23K 26/1482
- • {Detachable nozzles, e.g. exchangeable or **provided** with breakaway lines}
- U B23K 26/1488
- • {Means for protecting nozzles, e.g. the tip surface (by breakaway lines [B23K 26/1482](#))}
- U B23K 26/1494
- • {Maintenance of nozzles}
- B23K 26/16
- **Removing**~~Removal~~ of by-products, e.g. particles or vapours produced during treatment of a workpiece (~~by a flow of gas B23K 26/14~~**by a fluid stream** [B23K 26/142](#))
- B23K 26/18
- using absorbing layers on the ~~material being worked~~**workpiece**, e.g. for marking or protecting purposes ~~{(observing devices provided with laser radiation protection devices B23K 26/03; using masks on the workpiece for shaping the laser beam B23K 26/0661; interposing material for facilitating bonding B23K 26/203; laser anti-reflection devices, e.g. optical isolators H01S 3/0064)}~~
- B23K 26/20
- Bonding, ~~e.g. welding~~ (soldering by means of radiant energy [B23K 1/005](#); joining of preformed plastics parts by heating using laser beam [B29C 65/16](#))
- WARNING**
- Group B23K 26/20 is impacted by reclassification into group B23K 26/21. Groups B23K 26/20 and B23K 26/21 should be considered in order to perform a complete search.*
- D B23K 26/203
- {with interposition of material for facilitating bonding (with interposition of adhesive being heated by laser C09J 5/06; with interposition of solder B23K 1/0056)}

- N B23K 26/21
- • by welding
- WARNING  
Group [B23K 26/21](#) is incomplete pending reclassification of documents from group [B23K 26/20](#).  
Groups [B23K 26/20](#) and [B23K 26/21](#) should be considered in order to perform a complete search.
- N B23K 26/211
- • • with interposition of special material to facilitate connection of the parts
- B23K 26/22
- •  Spot welding
- B23K 26/24
- •  Seam welding
- N B23K 26/242
- • • • Fillet welding, i.e. involving a weld of substantially triangular cross section joining two parts
- D B23K 26/243
- • • {Fillet welding}
- N B23K 26/244
- • • • Overlap seam welding
- D B23K 26/246
- • • {Overlap welding}
- B23K 26/26
- • •  of rectilinear seams
- N B23K 26/262
- • • • • of longitudinal seams of tubes
- D B23K 26/265
- • • • {Longitudinal seams of tubes}
- B23K 26/28
- • •  of curved planar seams
- N B23K 26/282
- • • • • of tube sections
- D B23K 26/285
- • • • {Tube sections}
- B23K 26/30
- • •  of three-dimensional seams
- N B23K 26/302
- • • • • of helicoidal seams
- D B23K 26/305
- • • • {Helicoidal seams}
- B23K 26/32
- • taking account of the properties of the material involved
- WARNING  
Group [B23K 26/32](#) is incomplete pending reclassification of documents from group [B23K 26/322](#).  
Groups [B23K 26/32](#) and [B23K 26/322](#) should be considered in order to perform a complete search.
- D B23K 26/3206
- • • {Metallic material}
- D B23K 26/3213
- • • • {Non-ferrous metals or alloys}
- B23K 26/322
- • •  {Refractory metals} involving coated metal parts (using absorbing layers on the workpiece [B23K 26/18](#))
- WARNING  
Group [B23K 26/322](#) is impacted by reclassification into group [B23K 26/32](#).  
Groups [B23K 26/322](#) and [B23K 26/32](#) should be considered in order to perform a complete search.
- D B23K 26/3226
- • • • • {Light metals}
- N B23K 26/323
- • • involving parts made of dissimilar metallic material
- D B23K 26/3233
- • • • {Dissimilar metal materials}
- B23K 26/324
- • • {Noninvolving non-metallic material parts (joining glass to glass by fusing with laser C03B 23/20, by processes other than by fusing using laser C03C 27/06; joining ceramics C04B 37/00)}
- D B23K 26/3246
- • • • {Organic material (devices or method using laser on the body A61B 18/20; dental laser A61C 1/0046; eye laser surgery A61F 9/008; Treatment of micro-organisms with electric or wave energy C12N 13/00)}

- D B23K 26/3253 . . . . {Fabrics}
- D B23K 26/326 . . . . {Paper}
- D B23K 26/3266 . . {Inorganic material}
- D B23K 26/3273 . . . . {Ceramics}
- D B23K 26/328 . . . {Composite material, e.g. fibre reinforced, sandwich steel plate}
- D B23K 26/3286 . . . {Surface-treated material, e.g. plated, painted}
- D B23K 26/3293 . . . . {Coated material}
- B23K 26/34 . ~~Welding~~ **Laser welding** for purposes other than joining, ~~e.g. build-up welding~~ **{{laser alloying or sintering C23C}}**
- N B23K 26/342 . . Build-up welding
- D B23K 26/345 . . {Build-up welding}
- N B23K 26/346 . in combination with welding or cutting covered by groups [B23K 5/00](#) - [B23K 25/00](#), e.g. in combination with resistance welding
- WARNING**  
Groups [B23K 26/346](#) - [B23K 26/348](#) are incomplete pending reclassification of documents from group [B23K 26/00](#).  
Until reclassification is complete, group [B23K 26/00](#) should be considered in order to perform a complete search.
- N B23K 26/348 . . in combination with arc heating, e.g. TIG [tungsten inert gas], MIG [metal insert gas] or plasma welding (laser beam for starting a welding or cutting arc [B23K 9/067](#))
- N B23K 26/351 . . for trimming or tuning of electrical components
- N B23K 26/352 . . for surface treatment
- WARNING**  
Groups [B23K 26/352](#) - [B23K 26/359](#) are incomplete pending reclassification of documents from group [B23K 26/00](#).  
Groups [B23K 26/00](#) and [B23K 26/352](#) – [B23K 26/359](#) should be considered in order to perform a complete search.
- N B23K 26/354 . . by melting
- N B23K 26/356 . . by shock processing
- N B23K 26/359 . . by providing a line or line pattern, e.g. a dotted break initiation line
- B23K 26/36 . Removing material **{{laser wire stripping H02G 1/128; cleaning by laser treatment B08B 7/0042 B23K 26/55, B23K 26/57 take precedence}}**
- WARNING**  
Group [B23K 26/36](#) is impacted by reclassification into groups [B23K 26/36](#) and [B23K 26/55](#) – [B23K 26/57](#).  
Groups [B23K 26/36](#) and [B23K 26/55](#) – [B23K 26/57](#) should be considered in order to perform a complete search.
- N B23K 26/361 . . for deburring or mechanical trimming ([B23K 26/351](#) takes precedence)
- B23K 26/362 . . **{{Mechanical trimming-Laser etching (trimming of electric components B23K 26/0003); Deburring; Scarfing or desurfacing}}**
- N B23K 26/364 . . . for making a groove or trench, e.g. for scribing a break initiation groove
- D B23K 26/365 . . {Laser etching, i.e. the material is removed superficially or partially through the workpiece by the laser beam (laser etching for decorative purposes B44C 1/22, laser etching for manufacturing printed circuit boards H05K 3/00)}
- D B23K 26/367 . . . {for making a groove or trench, e.g. scribing a break initiation groove}
- U B23K 26/38 . . by boring or cutting

- D B23K 26/381 . . . {Boring (Via connections through an SC device substrate H01L 21/486)}
- N B23K 26/382 . . . *by boring*
- D B23K 26/383 . . . . {of specially-shaped holes}
- N B23K 26/384 . . . . *of specially shaped holes*
- D B23K 26/385 . . . . {of blind holes (Laser ablation of PCB-substrate blind holes having a metal layer at the bottom H05K 3/0035)}
- B23K 26/386 . . . . {~~Trepanning~~ of blind holes}
- B23K 26/388 . . . . {of fluid openings *Trepanning*, e.g. nozzles, jets *boring by moving the beam spot about an axis* (Laser machining of inkjet nozzles B41J 2/1634)}
- N B23K 26/389 . . . . {of fluid openings, e.g. nozzles, jets (laser machining of inkjet nozzles B41J 2/1634)}
- U B23K 26/40 . . taking account of the properties of the material involved
- D B23K 26/4005 . . . {Metallic material}
- D B23K 26/401 . . . . {Non-ferrous metals or alloys}
- D B23K 26/4015 . . . . {Refractory metals}
- B23K 26/402 . . . . {~~Light metals~~ involving non-metallic material, e.g. isolators}
- D B23K 26/4025 . . . {Non-metal material}
- D B23K 26/403 . . . . {Organic material}
- D B23K 26/4035 . . . . . {Material from living organisms, e.g. skin (devices or method using laser on the body A61B 18/20; dental laser A61C 1/0046; eye laser surgery A61F 9/008; Treatment of micro-organisms with electric or wave energy C12N 13/00; Introduction of foreign genetic material into plant cells by physical or non-biological means C12N 15/8206)}
- D B23K 26/404 . . . . . {Leather (clicking, perforating, or cutting leather C14B 5/00)}
- D B23K 26/4045 . . . . . {Wood or similar (working or preserving wood or similar material B27B-B27M)}
- D B23K 26/405 . . . . . {Fibrous material}
- D B23K 26/4055 . . . . . {Fabrics}
- D B23K 26/406 . . . . . {Paper (metallic paper B23K 26/4005)}
- D B23K 26/4065 . . . . . {Plastics}
- D B23K 26/407 . . . . . {Inorganic material}
- D B23K 26/4075 . . . . . {Brittle material, e.g. semi-conductor wafers (severing glass using laser C03B 33/0222, C03B 33/091)}
- D B23K 26/408 . . . . . {Ceramics}
- D B23K 26/4085 . . . {Composite material, e.g. fibre reinforced, sandwich steel plate}
- D B23K 26/409 . . . . {Multi-layered material wherein at least one layer is non-metallic}
- D B23K 26/4095 . . . {Surface-treated material, e.g. plated, painted}
- D B23K 26/42 . Preliminary treatment; Auxiliary operations or equipment (B23K 26/16 takes precedence)
- D B23K 26/421 . . {Preliminary treatment}
- D B23K 26/422 . . {Auxiliary equipment}
- D B23K 26/423 . . . {Cooling arrangements (by using a flow B23K 26/14)}
- D B23K 26/425 . . . {Beam dispersers, e.g. beam wells}
- D B23K 26/426 . . . {Beam measuring device (beam monitoring per se G01J 1/4257)}
- D B23K 26/427 . . . {Protective screens (goggles or eye-masks for welders carried on the body or in the hand A61F 9/02, A61F 9/06)}
- D B23K 26/428 . . . {for monitoring laser beam transmission optics}



- N B23K 26/50
- Working by transmitting the laser beam through or within the workpiece
- WARNING  
Groups [B23K 26/50](#) - [B23K 26/57](#) are incomplete pending reclassification of documents from groups [B23K 26/00](#) and [B23K 26/36](#).  
Groups [B23K 26/00](#), [B23K 26/36](#) and [B23K 26/50](#) – [B23K 26/57](#) should be considered in order to perform a complete search.
- N B23K 26/53
- • for modifying or reforming the material inside the workpiece, e.g. for producing break initiation cracks
- N B23K 26/55
- • for creating voids inside the workpiece, e.g. for forming flow passages or flow patterns
- N B23K 26/57
- • the laser beam entering a face of the workpiece from which it is transmitted through the workpiece material to work on a different workpiece face, e.g. for effecting removal, fusion splicing, modifying or reforming
- N B23K 26/60
- Preliminary treatment
- N B23K 26/70
- Auxiliary operations or equipment
- N B23K 26/702
- • {Auxiliary equipment}
- N B23K 26/703
- • • {Cooling arrangements (by using a fluid stream [B23K 26/14](#))}
- N B23K 26/704
- • • {Beam dispersers, e.g. beam wells}
- N B23K 26/705
- • • {Beam measuring device}
- N B23K 26/706
- • • {Protective screens}
- N B23K 26/707
- • • {for monitoring laser beam transmission optics}

**Project: RP0065 (B23K)**

**B23K 37/00** Auxiliary devices or processes, not specially adapted to a procedure covered by only one of the preceding main groups (eye-shields for welders worn on the operator's body or carried in the hand [A61F 9/00](#) (i.e. [A61F 9/02](#)); applicable to metal-working machines other than soldering, welding, or flame-cutting machines [B23Q](#); {laser protective screens [B23K 26/427](#) [B23K 26/706](#); } protective shields for other welding methods [F16P 1/06](#))

**Project: N/A (B23K)**

- U B23K 2201/00 Articles made by soldering, welding or cutting by applying heat locally
- B23K 2201/34
- Coated articles, e.g. *plated or painted*; *Surface treated articles*

WARNING

Group [B23K 2201/34](#) impacted by reclassification into group [B23K 2201/35](#).  
Groups [B23K 2201/34](#) and [B23K 2201/35](#) should be considered in order to perform a complete search.

- N B23K 2201/35
- • Surface treated articles

WARNING

Group [B23K 2201/35](#) is incomplete pending reclassification from [B23K 2201/34](#).

Groups [B23K 2201/34](#) and [B23K 2201/35](#) should be considered in order to perform a complete search.

**B23K 2203/00****Materials to be soldered, welded or cut**WARNING

Group [B23K 2203/00](#) is impacted by reclassification into groups [B23K 2203/50](#) – [B23K 2203/56](#).

Groups [B23K 2203/00](#) and [B23K 2203/50 – B23K 2203/56](#) should be considered in order to perform a complete search.

U B23K 2203/02  
B23K 2203/04

- Iron or ferrous alloys
- • Steel or steel alloys

WARNING

Group [B23K 2203/04](#) is impacted by reclassification into group [B23K 2203/05](#)  
Groups [B23K 2203/04](#) and [B23K 2203/05](#) should be considered in order to perform a complete search.

N B23K 2203/05

- • • Stainless steel

WARNING

Groups [B23K 2203/05](#) is incomplete pending reclassification from [B23K 2203/04](#).

Groups [B23K 2203/04](#) and [B23K 2203/05](#) should be considered in order to perform a complete search.

B23K 2203/08

- Non-ferrous metals or alloys

WARNING

Groups [B23K 2203/08](#) is impacted by reclassification into group [B23K 2203/15](#).

Groups [B23K 2203/08](#) and [B23K 2203/15](#) should be considered in order to perform a complete search.

N B23K 2203/15

- • Magnesium or alloys thereof

WARNING

Group [B23K 2203/15](#) is incomplete pending reclassification of documents from group [B23K 2203/08](#).

Groups [B23K 2203/08](#) and [B23K 2203/15](#) should be considered in order to perform a complete search.

B23K 2203/16

- Composite materials, e.g. fibre reinforced

WARNING

Group [B23K 2203/16](#) is impacted by reclassification into groups [B23K 2203/166 – B23K 2203/172](#).

Groups [B23K 2203/16](#) and [B23K 2203/166 – B23K 2203/172](#) should be considered in order to perform a complete search.

N B23K 2203/166

- • Multilayered materials

WARNING

Groups [B23K 2203/166](#) - [B23K 2203/172](#) are incomplete pending reclassification from [B23K 2203/16](#).

Groups [B23K 2203/16](#) and [B23K 2203/166 – B23K 2203/172](#) should be considered in order to perform a complete search.

N B23K 2203/172  
B23K 2203/18

- • • wherein at least one of the layers is non-metallic
- Dissimilar materials

WARNING

Group [B23K 2203/18](#) is impacted by reclassification into group [B23K 2203/26](#).  
Groups [B23K 2203/18](#) and [B23K 2203/26](#) should be considered in order to perform a complete search.

- N B23K 2203/26
- • Alloys of Nickel and Cobalt and Chromium
- WARNING  
Group [B23K 2203/26](#) is incomplete pending reclassification of documents from group [B23K 2203/18](#).  
Groups [B23K 2203/26](#) and [B23K 2203/18](#) should be considered in order to perform a complete search.
- N B23K 2203/30
- Organic material
- WARNING  
Groups [B23K 2203/30](#)- [B23K 2203/42](#) are incomplete pending reclassification from [B23K 2203/00](#).  
Groups [B23K 2203/00](#) and [B23K 2203/30](#) – [B23K 2203/42](#) should be considered in order to perform a complete search.
- N B23K 2203/32
- • Material from living organisms, e.g. skins
- N B23K 2203/34
- • • Leather
- N B23K 2203/36
- • Wood or similar materials
- N B23K 2203/38
- • Fabrics, fibrous materials
- N B23K 2203/40
- • Paper
- N B23K 2203/42
- • Plastics ([B23K 2203/16](#) takes precedence)
- N B23K 2203/50
- Inorganic material, e.g. metals, not provided for in [B23K 2203/02](#) – [B23K 2203/26](#)
- WARNING  
Groups [B23K 2203/50](#) - [B23K 2203/56](#) are incomplete pending reclassification from [B23K 2203/00](#) and [B23K 2203/50](#).  
Groups [B23K 2203/00](#) and [B23K 2203/50](#) – [B23K 2203/56](#) should be considered in order to perform a complete search.
- N B23K 2203/52
- • Ceramics
- N B23K 2203/54
- • Glass
- N B23K 2203/56
- • semiconducting (semiconducting devices [B23K 2201/40](#))

**Project: N/A (B24B)**

- U B24B 9/00
- Machines or devices designed for grinding edges or bevels on work or for removing burrs; Accessories therefor ([B24B 21/00](#) takes precedence ; for sharpening cutting edges on tools [B24B 3/00](#); removing burrs by loose abrasive material [B24B 31/00](#))**
- U B24B 9/02
- characterised by a special design with respect to properties of materials specific to articles to be ground
- U B24B 9/06
- • of non-metallic inorganic material, e.g. stone, ceramics, porcelain
- B24B 9/16
- • • of diamonds; of jewels or the like; Diamond grinders; dops; Dop holders or tongs (for grinding sharp pointed diamonds or sapphires [B24B 19/16](#))
- U B24B 31/00
- Machines or devices designed for polishing or abrading surfaces on work by means of tumbling apparatus or other apparatus in which the work and/ or the abrasive material is loose; Accessories therefor (abrasive blasting machines [B24C 3/26](#))**
- B24B 31/12
- Accessories; Protective equipment or safety devices; Installations for exhaustion of dust or for sound absorption specially adapted for machines covered by group [B24B 31/00](#) {(in general [B24B 55/00](#))}

**Project: N/A (B25B)**

- B25B 7/00** Pliers; Other hand-held gripping tools with jaws on pivoted limbs; Details applicable generally to pivoted-limb hand tools (implements for fastening, connecting, or tensioning wire or strip [B25B 25/00](#); adapted for other fitting or separating purposes [B25B 27/00](#); for marking animals [A01K 11/00](#); ~~dentists' forceps A61C 3/00~~; ~~dentists' forceps A61C 3/00~~; bending wire eyes [B21F 1/06](#); hand-held metal-shearing or metal-cutting devices [B23D 29/00](#); hand cutting tools [B26B](#); for punching or perforating [B26F 1/36](#); devices for securing ends of binding material in bundling machines [B65B 13/24](#); specially designed for watch-making or comparable work [G04D 1/00](#))
- B25B 9/00** Hand-held gripping tools other than those covered by group [B25B 7/00](#) (wrenches [B25B 13/00](#); ~~specially adapted for watchmakers' or like use G04D~~; ~~specially adapted for watchmakers' or like use G04D~~)
- U B25B 27/00** Hand tools, specially adapted for fitting together or separating parts or objects whether or not involving some deformation, not otherwise provided for (machines for simply fitting together or separating metal parts or objects [B23P 19/00](#))
- U B25B 27/14** • for assembling objects other than by press fit or detaching same
- B25B 27/30** • • positioning or withdrawing springs, e.g. coil or leaf springs ([B25B 27/26](#) takes precedence; ~~watchmakers' or watch-repairers' tools G04D~~; ~~watchmakers' or watch-repairers' tools G04D~~)

**Project: N/A (B25D)**

- U B25D 9/00** Portable percussive tools with fluid-pressure drive, {i.e. driven directly by fluids}, e.g. having several percussive tool bits operated simultaneously {(portable non-percussive drilling tools driven by fluid pressure or pneumatic power [B23B 45/04](#))}
- B25D 9/005** • {Devices for testing the ~~tool's~~ ~~tool's~~ performance}

**Project: N/A (B25F)**

- U B25F 1/00** Combination or multi-purpose hand tools (associations of tools for different working operations with one portable power-drive means [B25F 3/00](#); {combined stapling and punching tools [B25C 5/0214](#)})
- B25F 1/003** • {of pliers~~'s~~, scissors~~'s~~ or wrench-type with at least one movable jaw ([B25F 1/006](#) takes precedence)}

**Project: N/A (B25H)**

- B25H 5/00** Tool, instrument or work supports or storage means used in association with vehicles (means for holding wheels or parts thereof [B60B 30/00](#)); Workers~~'s~~ supports, e.g. mechanics~~'s~~ creepers {(collecting or removing exhaust gases in workshops [B08B 15/002](#); vehicle lifting devices, e.g. jacks, platforms or ramps [B66F](#))}

**Project: N/A (B26D)**

- U B26D 3/00** Cutting work characterised by the nature of the cut made; Apparatus therefor
- B26D 3/16** • Cutting rods or tubes transversely {(cutting tubes longitudinally [B26D 3/001](#)-)}{~~Note: B26D 3/161 takes precedence over groups B26D 3/162 to B26D 3/168~~}

**NOTE**

*[B26D 3/161](#) takes precedence over groups [B26D 3/162](#) to [B26D 3/168](#)*

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

**DOVETAILED WORK; TENONS; SLOTTING MACHINES FOR WOOD OR SIMILAR MATERIAL; NAILING OR STAPLING MACHINES** (hand-held nailing or stapling tools [B25C](#); manufacture of cases, trunks or boxes from wood [B27M 3/34](#); connections for building structures in general, e.g. dowels for use in building constructions [E04B 1/38](#); jointing elements in general, e.g. dowels in general, [F16B](#) {; manufacture of long strips or planks by bonding together pieces of wood, e.g. by glueing, [B27M 3/0013](#)))

NOTE

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

**Project: N/A (B27G)****B27G**

**ACCESSORY MACHINES OR APPARATUS; TOOLS; SAFETY DEVICES** e.g. **THOSE FOR SAWS** (clamping devices for mitre joints, presses for producing frames, press frames, or cages equipped with clamping devices [B25B](#); ~~woodworkers' benches~~ [B25H](#); ~~woodworkers' benches~~ [B25H](#))

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:

[B27G 17/08](#) covered by [B25D 3/00](#)

**Project: MP0124 (B28C)****U B28C 1/00**

**Apparatus or methods for obtaining or processing clay** (filtration in general [B01D](#); separation of solids from solids [B03](#), [B07](#); chemical part [C04B](#); by mining or quarrying [E21C 41/16](#), [E21C 41/26](#), [E21C 47/10](#))

**M B28C 1/02**

• for producing or ~~proecessing~~[processing](#) clay suspensions; {, e.g. slip} (producing or processing suspensions in general [B01](#))

**Project: N/A (B29C)****U B29C 47/00**

**Extrusion moulding, i.e. expressing the moulding material through a die or nozzle which imparts the desired form; Apparatus therefor** (extrusion blow-moulding [B29C 49/04](#); extrusion presses in general [B30B 11/22](#))

**U B29C 47/08**

• Component parts, details or accessories; Auxiliary operations

**U B29C 47/10**

• • Feeding the material to the extruder

**B29C 47/1009**

• • • {Raw material dosing}

**B29C 47/1018**

• • • {Raw material pre-treatment while feeding (pre-treatment of the material to be shaped in general [B29B 15/00](#); handling of the material to be shaped in general [B29C 31/00](#); [B29C 47/78](#) takes precedence)}

**U B29C 49/00**

**Blow-moulding, i.e. blowing a preform or parison to a desired shape within a mould; Apparatus therefor** {(extrusion moulding of tubular films [B29C 47/0026](#); enlarging tube ends using pressure difference [B29C 57/08](#))}

**U B29C 49/42**

• Component parts, details or accessories; Auxiliary operations

**U B29C 49/64**

• • Heating or cooling preforms, parisons or blown articles

**U B29C 49/6409**

• • • {Thermal conditioning of preforms ([B29C 49/68](#) takes precedence)}

**U B29C 49/6436**

• • • • {producing a temperature differential}

**B29C 49/6454**

• • • • • {along the preform thickness}

**Project: MP0123 (B29C)****M B29C 66/00**

{General aspects of processes or apparatus for joining preformed parts (means for handling the parts to be joined [B29C 65/78](#); testing the joint [B29C 65/82](#))}

**WARNING**

Groups B29C 66/00 - B29C 66/98 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - B29C 66/00 - B29C 66/98 : B29C 65/00 }

**Project: N/A (B29K)****B29K****INDEXING SCHEME ASSOCIATED WITH SUBCLASSES [B29B](#), [B29C](#) OR [B29D](#), RELATING TO MOULDING MATERIALS****NOTES**

1. This subclass constitutes an indexing scheme associated with subclasses [B29B](#), [B29C](#) or [B29D](#).

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

- "rubber" covers:
  - a. natural or conjugated diene rubbers;
  - b. rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for such macromolecular compounds

3. Documents relating to compositions or properties of the materials to be shaped, said compositions having a particular influence on the shaping technique, should be classified in the shaping technique, e.g. [B29C 39/003](#), [B29C 41/003](#), [B29C 43/003](#), [B29C 45/0001](#), [B29C 47/0004](#), [B29C 49/0005](#), [B29C 51/002](#), [B29C 53/005](#), [B29C 55/005](#), [B29C 61/003](#), [B29C 63/0017](#) and **[B2965/00S](#)**

Copolymers are indexed with the same indexing code as the majority polymers

**WARNINGS**

1. The following IPC indexing codes are not being used: [B29K 105/02](#), [B29K 105/22](#), [B29K 105/28](#), [B29K 105/30](#), [B29K 105/32](#) and [B29K 105/34](#)

The aspect of [B29K 105/02](#) is covered by [B29K 2995/0064](#)

The aspect of [B29K 105/22](#) is covered by ~~[B29K 705/00](#)~~ [B29K 2705/00](#)

The aspect of [B29K 105/28](#) is covered by [B29K 2995/0025](#)

The aspect of [B29K 105/30](#) is covered by [B29K 2995/003](#)

The aspect of [B29K 105/32](#) is covered by [B29K 2995/0026](#)

The aspects of [B29K 105/34](#) are covered by [B29K 2995/002](#), [B29K 2995/0007](#) and [B29K 2995/0015](#)

**Subclass indexes**

Compositions for moulding materials, condition, form or state of moulded material: **[B29K1/00](#) - [B29K105/00](#)**

Compositions for reinforcements: **[B29K201/00](#) - [B29K313/00](#)**

Compositions for fillers: **[B29K401/00](#) - [B29K511/00](#)**

Compositions for preformed parts: **[B29K601/00](#) - [B29K713/00](#)**

Compositions for moulds: **[B29K801/00](#) - [B29K913/00](#)**

Properties of moulding materials, reinforcements, fillers, preformed parts or moulds: **[B29K995/00](#)**

Compositions for moulding materials;

Condition, form or state of moulded material

2. From the date indicated below, the following groups have been deleted from the classification scheme. The documents of these groups have been transferred to the new groups as follows :

~~[B29K 105/28](#)~~ ~~[B29K105/28](#)~~ transferred to [B29K 2995/0025](#)

~~[B29K 105/30](#)~~ ~~[B29K105/30](#)~~ transferred to [B29K 2995/003](#)



~~B29K 105/32~~ **B29K 105/32** transferred to [B29K 2995/0026](#)  
~~B29K 105/34~~ **B29K 105/34** transferred to [B29K 2995/002](#), [B29K 2995/0007](#),  
**B29K 000D4**

- U B29K 2021/00** Use of {unspecified rubbers as moulding material (as such [C08L 21/00](#))}
- B29K 2021/003 • {Thermoplastic elastomers}
- B29K 2021/006 • {Thermosetting elastomers}
- U B29K 2221/00** Use of {unspecified rubbers as reinforcement (as such [C08L 21/00](#))}
- B29K 2221/003 • {Thermoplastic elastomers}
- B29K 2221/006 • {Thermosetting elastomers}
- U B29K 2421/00** Use of {unspecified rubbers as filler (as such [C08L 21/00](#))}
- B29K 2421/003 • {Thermoplastic elastomers}
- B29K 2421/006 • {Thermosetting elastomers}
- U B29K 2621/00** Use of {unspecified rubbers for preformed parts, e.g. inserts (as such [C08L 21/00](#))}
- B29K 2621/003 • {Thermoplastic elastomers}
- B29K 2621/006 • {Thermosetting elastomers}

**Project: N/A (B29L)**

**B29L**

**INDEXING SCHEME ASSOCIATED WITH SUBCLASS [B29C](#), RELATING TO PARTICULAR ARTICLES**

**NOTE**

This subclass constitutes an indexing scheme for non-obligatory use only. The indexing scheme may be used to identify information which supplements subject matter already classified in subclass [B29C](#). The indexing codes of this subclass, of which only the pertinent ones should be selected, are added in conformity with paragraph 82 of the Guide so as to provide information concerning the articles produced

This subclass constitutes an indexing scheme associated with subclass [B29C](#) (and group [B29B 17/00](#). Parts of specified articles are indexed with the same index codes as the articles)

- U B29L 2023/00** Tubular articles ([B29L 2024/00](#) takes precedence; {catheters [B29L 2031/7542](#)})
- B29L 2023/008 • {Drinking straws}

**Project: MP0123 (B29L)**

- M B29L 2031/00** Other particular articles

**WARNING**

Groups B29L 2031/70 – B29L 2031/7782 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: B29L 2031/70 – B29L 2031/7782: B29L 31/00

**Project: N/A (B29L)**

- U B29L 2031/32** • Wheels, pinions, pulleys, castors or rollers, {Rims (inner tubes [B29L 2023/245](#); gears [B29L 2015/003](#); tyres [B29L 2030/00](#))}
- B29L 2031/322 • • {made wholly of plastics}

- U B29L 2031/324      · · {Rollers or cylinders having an axial length of several times the diameter, e.g. embossing, pressing or printing}
- B29L 2031/326      · · · {made wholly of plastics}
- B29L 2031/328      · · {Paint rollers}

**Project: MP0124 (B29L)**

- U B29L 2031/42      · Brushes
- M B29L 2031/425      · · {~~Toothbrushes~~ Toothbrush}

**Project: N/A (B29L)**

- U B29L 2031/767      · {Printing equipment or accessories therefor}
- B29L 2031/7678      · · {Ink or toner cartridges}

**Project: MP0124 (B30B)**

- U B30B 9/00      Presses specially adapted for particular purposes**
- U B30B 9/30      · for baling; Compression boxes therefor (baling hay, straw, or the like [A01F](#))
- M B30B 9/3042      · · {Containers provided with, or connectable to, ~~compacter~~ compactor means}

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

- U B30B 11/00      Presses specially adapted for forming shaped articles from material in particulate or plastic state, e.g. briquetting presses, tableting presses (for clay or mixtures containing cement [B28B](#); for plastics materials [B29](#))**
- U B30B 11/22      · Extrusion presses; Dies therefor (extruding by the use of roller-and-ring machines [B30B 11/20](#))
- U B30B 11/24      · · using screws or worms
- B30B 11/241      · · · {Drive means therefor; screw bearings}

**Project: MP0124 (B30B)**

- U B30B 15/00      Details of, or accessories for, presses; Auxiliary measures in connection with pressing (safety devices [F16P](#))**
- U B30B 15/04      · Frames; Guides
- M B30B 15/044      · · {Means preventing ~~deflexion~~ deflection of the frame, especially for C-frames}

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

- U B31B 2201/00      Specific operations carried out during box making**
- U B31B 2201/02      · Feeding or positioning webs, blanks or boxes
- U B31B 2201/0235      · · Feeding or positioning blanks
- U B31B 2201/0264      · · · from stacks
- B31B 2201/0282      · · · · from above a magazine}
- U B31B 2201/28      · Opening or distending flattened boxes
- U B31B 2201/287      · · pneumatically
- B31B 2201/289      · · · with several suction devices on a rotating element}
- U B31B 2201/62      · Coating; Impregnating; Water proofing; Decoating
- B31B 2201/625      · · by immersing in a bath}

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

**B32B**

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

#### NOTES

1. This subclass covers:

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

2. This subclass does not cover:

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

3. In this subclass:

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

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

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

- "filamentary layer" means a layer of threads or filaments of any substance (e.g. wires) of more or less unlimited length placed in an orderly arrangement and secured together; it may be woven, knitted, braided, or netted, or formed of threads crossed or laid side by side and bonded together;
- "fibrous layer" means a random assembly of fibres of limited length, e.g. felt, fleece; the fibres {being} interengaged or connected, e.g. by adhesive.

5. In this subclass,

- "First place rule" is used in the following groups [B32B 9/04](#), [B32B 11/04](#), [B32B 13/04](#), [B32B 15/04](#), [B32B 19/04](#), [B32B 21/04](#), [B32B 23/04](#) - [B32B 23/12](#), [B32B 25/04](#), [B32B 27/06](#), [B32B 29/00](#).

However, when these groups are not characterised by the specific material adjacency to be classified, then, multiple classification is given, e.g. a layered product having a stone layer next to a bituminous layer would be classified in [B32B 9/04](#) and in [B32B 11/04](#). For a cellulosic plastic layer next to a metal layer or to a wood layer [B32B 23/04](#) or [B32B 23/044](#), respectively, take precedence (i.e. first rule does not apply). For layered products comprising at least two ceramic layers, products comprising only ceramic layers are classified in group [B32B 18/00](#) and products comprising two ceramics layers and at least one layer of another material are classified in [B32B 18/00](#) and [B32B 9/04](#).

#### WARNING

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

- ~~B32B 1/04~~ [B32B 1/04](#) covered by [B32B 3/02](#) - [B32B 3/08](#)
- ~~B32B 1/06~~ [B32B 1/06](#) covered by [B32B 13/02](#)
- ~~B32B 3/08~~ - ~~B32B 3/22~~ covered by [B32B 3/08](#) - ~~B32B 3/22~~ covered by [B32B 3/08](#) - ~~B32B 3/22~~
- [B32B 3/24](#) covered by [B32B 3/266](#)
- ~~B32B 5/28~~ [B32B 5/28](#) covered by [B32B 2260/021](#) - [B32B 2260/023](#)
- ~~B32B 17/02~~ [B32B 17/02](#) covered by [B32B 2262/101](#)
- ~~B32B 17/04~~ [B32B 17/04](#) covered by [B32B 2262/101](#) and [B32B 2260/04](#)
- [B32B 17/12](#) covered by [B32B 17/067](#)
- ~~B32B 23/02~~ [B32B 23/02](#) covered by [B32B 2262/04](#) and [B32B 5/02](#) - [B32B 5/12](#)
- ~~B32B 27/02~~ [B32B 27/02](#) covered by [B32B 2262/02](#) - [B32B 2262/0292](#) and [B32B 5/02](#) - [B32B 5/12](#)
- ~~B32B 27/04~~ [B32B 27/04](#) covered by [B32B 2260/048](#)

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

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

#### NOTE

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

B32B 5/22

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

B32B 13/00

**Layered products comprising a {a layer of} water-setting substance, e.g. concrete, plaster, asbestos cement, or like builders' material**

**B32B 37/00 -  
B32B 43/00****Methods or apparatus for making layered products; Treatment of the layers or of the layered products****NOTE**

In groups [B32B 37/00](#)-{ , [B32B 38/00](#), [B32B 41/00](#)} and [B32B 39/00](#), the following expressions are used with the meaning indicated:

- {"lay-up" is considered to be the action of combining separate layers, one on top of the other, in order to form a half-product for entering the laminating process}
- "laminating" means the action of combining previously unconnected {but possibly laid up} layers to become one product whose layers will remain together;
- "partial laminating" occurs when one layer does not fully cover a surface of another layer, whereby the layer with the greater surface area is laminated on only part of its surface;
- "adhesive" means a layer, or part of a layer, applied in any state or in any manner which is incorporated for the purpose of bonding.

U B32B 37/10

- characterised by the pressing technique, e.g. using action of vacuum or fluid pressure

B32B 37/1009

- {using vacuum and fluid pressure}

**Project: N/A (B41F)**

U B41F 19/00

**Apparatus or machines for carrying out printing operations combined with other operations (auxiliary perforating apparatus associated with printing devices [B41G 7/00](#); coding or marking in association with packaging [B65B 61/00](#); label dispensers having printing equipment [B65C](#))**

B41F 19/02

- with embossing (~~printing with a printer's forme combined with embossing~~ [B41M 1/24](#) *printing with a printer's forme combined with embossing* [B41M 1/24](#))

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

B41M 1/00

**Inking and printing with a ~~printer's~~ *printer's* forme**

**Project: N/A (B44B)**

B44B 1/00

**~~Artist's~~ *Artist's* machines or apparatus equipped with tools or work holders moving or able to be controlled three-dimensionally for making single sculptures or models (copying devices for machine tool use [B23Q 35/00](#))**

B44B 3/00

**~~Artist's~~ *Artist's* machines or apparatus equipped with tools or work holders moving or able to be controlled substantially two- dimensionally for carving, engraving, or guilloching shallow ornamenting or markings (marking or engraving metal by the action of a high concentration of electric current [B23H 9/06](#); forme engraving [B41C](#), [B41D](#); engraving by photo-mechanical reproduction [G03F](#))**

U B44B 2700/00

**Machines, apparatus, tools or accessories for artistic work**

B44B 2700/02

- ~~Artist's~~ *Artist's* machines or apparatus equipped with tools or work holders moving or able to be controlled substantially two-dimensionally for carving, engraving, or guilloching shallow ornamenting or markings

**Project: MP0124 (B60B)**

U B60B 3/00

**Disc wheels, i.e. wheels with load-supporting disc body (non- metallic [B60B 5/00](#); wheel cover discs [B60B 7/00](#) {; disc wheels comprising rail-engaging elements [B60B 17/0006](#)})**

- U B60B 3/04
  - with a single disc body not integral with rim, {i.e. disc body and rim being manufactured independently and then permanently attached to each other in a second step, e.g. by welding}
- U B60B 3/041
  - • {characterised by the attachment of rim to wheel disc}
- M B60B 3/045
  - • • {characterised by the attachment portions}
- M B60B 3/047
  - • • • {comprising specific torque transmitting means}
- M B60B 3/048
  - • {the rim being rotatably mounted to the wheel disc}

**Project: N/A (B60B)**

- U B60B 21/00
  - Rims (non-metallic [B60B 5/00](#); of high resiliency [B60B 9/00](#); capable of carrying more than one tyre [B60B 11/04](#); multiple rims on a single wheel body [B60B 11/06](#); of multi-part type [B60B 25/00](#); metal tyres [B60C](#))**
- U B60B 21/12
  - Appurtenances, e.g. lining bands
- B60B 21/125
  - • {Bead clamping elements}

**Project: MP0124 (B60B)**

- U B60B 25/00
  - Rims built up of several main parts {Locking means for the rim parts}{tools for assembling divided rims [B60B 31/04](#)}**
- U B60B 25/04
  - Rims with dismountable flange rings, seat rings, or lock rings
- M B60B 25/045
  - • {on both sides}

**Project: N/A (B60C)**

- U B60C 11/00
  - Tyre tread bands; Tread patterns; Anti-skid inserts**
- U B60C 11/14
  - Anti-skid inserts, e.g. vulcanised into the tread band
- U B60C 11/16
  - • of plug form, e.g. made from metal, textile
- U B60C 11/1606
  - • • {retractable plug}
- B60C 11/1612
  - • • • {actuated by fluid, e.g. using fluid pressure difference}
- U B60C 25/00
  - Apparatus or tools adapted for mounting, removing, repairing or inspecting pneumatic or solid tyres (apparatus or tools for mounting or dismounting wheels [B60B 29/00](#); apparatus or tools characterised by the means for holding wheels or parts thereof [B60B 30/00](#))**
- B60C 25/16
  - {Tools for repairing damaged tyres}
- U B60C 27/00
  - Non-skid devices temporarily attachable to resilient tyres or resiliently-tyred wheels {(vehicle mounted non-skid chains [B60B 39/00](#))}**
- U B60C 27/02
  - extending over restricted arcuate parts of the circumference of the tread ([B60C 27/20](#) takes precedence)
- U B60C 27/0207
  - • {involving lugs or rings taking up wear, e.g. chain links, chain connectors (chain couplings for e.g. hoisting [F16G 15/00](#))}
- B60C 27/0223
  - • • {Studded links, i.e. traction enhancing parts located on the link or inserted into the link}

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

- U B60G 2206/00
  - Indexing codes related to the manufacturing of suspensions: constructional features, the materials used, procedures or tools**
- U B60G 2206/01
  - Constructional features of suspension elements, e.g. arms, dampers, springs
- U B60G 2206/011
  - • Modular constructions
- B60G 2206/0116
  - • • Integrated distribution control units with valves, accumulators, ~~PCB's~~ [PCB's](#) or the like



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

- U B60H 1/00** Heating, cooling or ventilating devices (heating, cooling or ventilating devices providing other air treatment, the other treatment being relevant, [B60H 3/00](#); ventilating solely by opening windows, doors, roof parts, or the like [B60J](#); heating or ventilating devices for vehicle seats [B60N 2/56](#); vehicle window or windscreen cleaners using air, e.g. defrosters, [B60S 1/54](#))
- NOTE
- In this group and its subgroups, as well as in patent documents, the following abbreviation is used:
- HVAC Heating, Ventilating and Air Conditioning
- U B60H 1/00642** • {Control systems or circuits, control members or indication devices for heating, cooling or ventilating devices ([B60H 1/3201](#) - [B60H 1/3208](#), [B60H 1/3225](#) take precedence; dashboards [B60K 37/00](#); systems for controlling or regulating non-electric variables in general [G05D](#))}
- U B60H 1/00735** • • {Control systems or circuits characterised by their input, i.e. by the detection, measurement or calculation of particular conditions, e.g. signal treatment, dynamic models}
- B60H 1/00742** • • • {by detection of the vehicle occupants' presence; by detection of conditions relating to the body of occupants, e.g. using radiant heat detectors}

**Project: MP0124 (B60K)**

- U B60K 15/00** Arrangement in connection with fuel supply of combustion engines {or other fuel consuming energy converters, e.g. fuel cells}; Mounting or construction of fuel tanks (tanks in general [B65D](#), [F17C](#); supplying combustion engines with combustible mixtures or constituents [F02M](#))
- U B60K 15/03** • Fuel tanks (chassis frame comprising fluid storage compartment [B62D 21/16](#); {Details of the fuel feeding system related to the fuel tank [F02M 37/0076](#)})
- U B60K 15/04** • • Tank inlets ([B60K 15/077](#) takes precedence)
- U B60K 15/0406** • • • {Filler caps for fuel tanks}
- M B60K 2015/0419** • • • • {Self-sealing closure caps, e.g. means that the cap don't have to be removed manually}

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

- U B60K 17/00** Arrangement or mounting of transmissions in vehicles (clutches per se, e.g. construction thereof, [F16D](#); gearing per se, e.g. construction thereof, [F16H](#))
- U B60K 17/04** • characterised by arrangement, location, or kind of gearing (electric equipment or propulsion of electrically-propelled vehicles [B60L](#))
- U B60K 17/16** • • of differential gearing
- B60K 17/18** • • • {in which the differential movement is obtained by resilient means}
- B60K 17/20** • • • {in which the differential movement is limited}
- U B60K 17/34** • for driving both front and rear wheels, e.g. four wheel drive vehicles (arrangement or mounting of control devices for changing number of driven wheels [B60K 23/08](#))
- B60K 17/358** • • {all driven wheels being steerable}
- U B60K 20/00** Arrangement or mounting of change-speed gearing control devices in vehicles (movable cabs having special adaptations of vehicle control devices [B62D 33/06](#); such control devices per se [F16H](#))
- U B60K 20/02** • of initiating means (control mechanisms in general [G05G](#))

B60K 20/14

- • {fluid}

U B60K 31/00

Vehicle fittings, acting on a single sub-unit only, for automatically controlling, i.e. preventing speed from exceeding an arbitrarily established velocity or maintaining speed at a particular velocity, as selected by the vehicle operator (fittings acting on two or more sub-units [B60W 30/14](#); propulsion unit control in general, see the relevant classes or subclasses, e.g. [F02D](#); speedometers [G01P](#); systems or devices for controlling speed in general [G05D 13/00](#); {in traffic anti-collision system for road vehicles [G08G 1/16](#)})

## NOTE

In this group:

- the means ordinarily includes a device, e.g. a servomechanism, for operating a velocity-affecting element of the vehicle, e.g. the throttle;
- a means for preventing a vehicle from exceeding a particular speed is often referred to as a "governor", whereas a means for maintaining the vehicle within a relatively narrow speed range is generally designated as "speed control". Since these two functions are frequently interrelated, no attempt has been made to identify such means as being particularly adapted to perform only one, or the other of the functions.

U B60K 31/02

- including electrically actuated servomechanism {including an electric control system or a servomechanism in which the vehicle velocity affecting element is actuated electrically}

U B60K 31/04

- • and means for comparing one electrical quantity, e.g. voltage, pulse, waveform, flux, or the like, with another quantity of a like kind, which comparison means is involved in the development of an electrical signal which is fed into the controlling means

U B60K 31/042

- • • {where at least one electrical quantity is set by the vehicle operator}

U B60K 31/045

- • • • {in a memory, e.g. a capacitor}

B60K 31/047

- • • • • {the memory being digital}}

## Project: N/A (B60L)

U B60L 3/00

Electric devices on electrically-propelled vehicles for safety purposes; Monitoring operating variables, e.g. speed, deceleration, power consumption (measuring in general [G01](#))

B60L 3/02

- Dead-~~man`s~~*man's* devices

## Project: MP0124 (B60N)

U B60N 2/00

Seats specially adapted for vehicles (for facilitating access of invalids to, or exit of invalids from, vehicles [A61G 3/02](#); railway seats [B61D 33/00](#); cycle seats [B62J 1/00](#); aircraft seats [B64D 11/06](#), [B64D 25/04](#), [B64D 25/10](#))

U B60N 2/02

- the seat or part thereof being movable, e.g. adjustable ({[B60N 2/427](#) takes precedence } ; adjustable arm-rests [B60N 2/46](#); adjustable head-rests [B60N 2/48](#))

M B60N 2/0224

- • {Non-manual ~~adjustments~~*adjustment*, e.g. with electrical operation ([B60N 2/0296](#), [B60N 2/52](#), [B60N 2/6673](#) take precedence; for adjusting head-rests with electric motors [B60N 2/4829](#), [B60N 2/4852](#))}

## Project: N/A (B60N)

U B60N 2/24

- for particular purposes or particular vehicles

U B60N 2/26

- • for children ([B60N 2/30](#) takes precedence)

- U B60N 2/28      • • • Seats readily mountable on, and dismountable from, existing seats {or other parts} of the vehicle
- B60N 2/2854      • • • • {~~Children`s~~*Children's* cots; Hammocks (~~children`s chairs in general~~  
*A47D 1/00children's chairs in general A47D 1/00*)}

**Project: MP0124 (B60P)**

- M B60P      **VEHICLES ADAPTED FOR LOAD TRANSPORTATION OR TO TRANSPORT, TO CARRY, OR TO COMPRISE SPECIAL LOADS OR OBJECTS (vehicles with special provisions for ~~invalids~~*transporting patients or disabled persons, or their personal conveyances* [A61G 3/00](#))**

NOTE

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

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:

B60P 1/46      covered by [B60P 1/4421](#)  
 B60P 3/022      covered by [E04G 21/14](#)  
 B60P 3/325      covered by [B60P 3/32](#)  
 B60P 3/33      covered by [B60P 3/34](#)  
 B60P 3/335      covered by [B60P 3/32](#)  
 B60P 3/345      covered by [B60P 3/34](#)  
 B60P 3/35      covered by [B60P 3/34](#)  
 B60P 3/355      covered by [B60P 3/34](#)  
 B60P 3/363      covered by [B60P 3/36](#)  
 B60P 3/367      covered by [B60P 3/36](#)  
 B60P 3/37      covered by [B60P 3/343](#)  
 B60P 3/373      covered by [B60P 3/32](#)  
 B60P 3/377      covered by [B60P 3/34](#)  
 B60P 5/00      covered by [G01G 19/08](#)

- M B60P 3/00      **Vehicles adapted to transport, to carry or to comprise special loads or objects (~~ambulance aspects, vehicles with special provisions for invalids~~  
~~A61G 3/00~~*; 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](#))**

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

- U B60Q 1/00      **Arrangements or adaptations of optical signalling or lighting devices (for lighting vehicle interior [B60Q 3/00](#); {circuit arrangements for electric light sources in general [H05B 37/00](#)})**
- U B60Q 1/26      • the devices being primarily intended to indicate the vehicle, or parts thereof, or to give signals, to other traffic {(such devices mounted on the vehicle rear part [F21S 48/20](#); means for the lighting or illuminating of aerials, e.g. for purpose of warning [H01Q 1/06](#))}
- U B60Q 1/34      • • for indicating change of drive direction ([B60Q 1/22](#) takes precedence)
- B60Q 1/346      • • • {with automatic actuation}
- U B60Q 1/44      • • for indicating braking action or preparation for braking, {e.g. by detection of the foot approaching the brake pedal}
- B60Q 1/441      • • • {Electric switches operable by the ~~driver`s~~*driver's* pedals (electric switches in general [H01H](#))}

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

- U B60R 5/00** **Compartments within vehicle body primarily intended or sufficiently spacious for trunks, suit-cases, or the like (primarily intended for stowing loads in load-transporting vehicles [B60P](#); arrangements for stowing spare wheels [B62D 43/00](#))**
- B60R 5/003 • {Luggage racks, e.g. for busses (primarily intended for passengers` property smaller than suitcases [B60R 7/04](#); [B60R 7/08](#); luggage racks for rail vehicles [B61D 37/003](#))}
- U B60R 13/00** **Elements for body-finishing, identifying, or decorating; Arrangements or adaptations for advertising purposes**
- B60R 13/005 • {Manufacturers` emblems, name plates, bonnet ornaments, mascots or the like; Mounting means therefor}
- B60R 13/08 • Insulating elements, e.g. for sound insulation {(sound insulating linings for trains [B61D 17/185](#); ~~drivers` cabs for load-carrying vehicles insulated against vibrations or noise [B62D 33/0604](#)~~; *drivers' cabs for load-carrying vehicles insulated against vibrations or noise [B62D 33/0604](#)*; thermal or acoustic insulation of engines [F02B 77/11](#); damping of sounds using compensation by electro-acoustic methods [G10K 11/178](#))}

**Project: MP0124 (B60R)**

- M B60R 13/0815** • • {Acoustic ~~efor~~ thermal insulation of passenger compartments (wall or roof liners integrating the insulating function [B60R 13/02](#); insulating floor mats or carpets [B60N 3/04](#))}

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

- U B60R 19/00** **Wheel guards; Radiator guards, {e.g. grilles}; Obstruction removers; Fittings damping bouncing force in collisions ({reinforcement elements for side doors [B60J 5/0412](#); } mudguards [B62D](#))**
- B60R 19/02 • Bumpers, i.e. impact receiving or absorbing members for protecting vehicles or fending off blows from other vehicles or objects ({[B60R 19/56](#) takes precedence; } initiating brake action by contact of bumper with an external object [B60T 7/22](#); for rail vehicles [B61F 19/04](#); safety equipment for cycles [B62J 27/00](#); ~~integral with waterborne vessels or specially adapted therefor [B63B 59/02](#)~~; *integral with waterborne vessels or specially adapted therefor [B63B 59/02](#)*)
- U B60R 19/24** • • Arrangements for mounting bumpers on vehicles
- B60R 2019/247 • • {Fastening of bumpers` side ends}
- U B60R 22/00** **Safety belts or body harnesses in vehicles (safety belts or body harnesses in general [A62B 35/00](#))**
- B60R 22/10 • specially adapted for children or animals (~~children`s seats [B60N 2/24](#)~~*children's seats [B60N 2/24](#)*)
- NOTE**  
Groups [B60R 22/02](#)-[B60R 22/022](#) to [B60R 22/08](#), [B60R 22/18](#) to [B60R 22/48](#) take precedence over group [B60R 22/10](#)
- B60R 22/105 • • {for children (~~adaptation of children`s seats for seat belts [B60N 2/265](#), [B60N 2/2803](#)~~*adaptation of children's seats for seat belts [B60N 2/265](#), [B60N 2/2803](#)*)}
- U B60R 22/12** • Construction of belts or harnesses ([B60R 21/18](#) takes precedence; {woven fabrics for safety belts [D03D 1/0005](#))}

B60R 22/14

- incorporating enlarged restraint areas, e.g. vests, nets {, crash pads, optionally for children (crash pads for occupants- safety on vehicles in general [B60R 21/02](#))}

**Project: N/A (B60T)****U B60T 7/00****Brake-action initiating means**

U B60T 7/12

- for automatic initiation; for initiation not subject to will of driver or passenger {(limiting speed of vehicles other than rail vehicles [B60K 31/00](#))}

B60T 7/14

- operated upon collapse of driver (~~deadman`s devices for electrically propelled vehicles B60L 3/02~~ *deadman's devices for electrically propelled vehicles B60L 3/02*)

**U B60T 15/00****Construction arrangement, or operation of valves incorporated in power brake systems and not covered by groups [B60T 11/00](#) or [B60T 13/00](#) (valve structures responsive to a speed condition [B60T 8/34](#); valves in general [F16K](#))**

U B60T 15/02

- Application and release valves

B60T 15/04

- ~~Driver`s~~ *Driver's* valves

**Project: N/A (B62B)****U B62B 5/00****Accessories or details specially adapted for hand carts ({[B62B 3/1404](#)}, [B62B 9/00](#) take precedence; wheels, axles, or axle bearing for vehicles [B60B](#); castors for vehicles, castors in general [B60B 33/00](#))**

B62B 5/08

- ~~Children`s~~ *Children's* seats ([B62B 3/14](#) takes precedence); {Seats or supports for other persons}

B62B 5/082

- {~~Children`s~~ *Children's* seats}

**B62B 7/00****Carriages for children; Perambulators, e.g. dolls` perambulators**

U B62B 7/04

- having more than one wheel axis; Steering devices therefor

B62B 7/12

- convertible, e.g. into ~~children`s~~ *children's* furniture or toy (~~children`s chairs convertible to pushchairs A47D 1/06~~ *children's chairs convertible to pushchairs A47D 1/06*)

**B62B 9/00****Accessories or details specially adapted for ~~children`s~~ *children's* carriages or perambulators (providing for travelling on snow [B62B 19/00](#))****U B62B 13/00****Sledges with runners (ice boats or sailing sledges [B62B 15/00](#))**

B62B 13/005

- {comprising articulated sledge segments}

**U B62B 15/00****Other sledges; Ice boats or sailing sledges**

U B62B 15/001

- {propelled by sails}

B62B 15/002

- {having skis or runners}

**Project: N/A (B62D)****U B62D 33/00****Superstructures for load-carrying vehicles ({having impact absorbing means [B62D 21/15](#); } in which a load-carrying element is movable [B60P](#); liners [B60R 13/00](#); {joining sheets or plates to one another or to strips or bars parallel to them [F16B 5/00](#))}**

B62D 33/06

- Drivers` cabs {(overhead guards, e.g. against loads falling down [B60R 21/11](#); roll-over protection [B60R 21/13](#))}

**Project: RP0117 (B62D)**

**B62D 51/00** Motor vehicles characterised by the driver not being seated {(wheeled carriers for golf bags ~~A63B 55/08~~ ~~A63B 55/60~~)}

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

**U B62D 53/00** Tractor-trailer combinations; Road trains (traction couplings other than fifth wheel coupling [B60D](#) {tracked vehicles comprising at least two articulated parts [B62D 55/0655](#)})

**B62D 53/04** • comprising a vehicle carrying an essential part of the other ~~vehicle's~~ ~~vehicle's~~ load by having supporting means for the front or rear part of the other vehicle

**Project: N/A (B62J)**

**U B62J 17/00** Weather guards for riders; Fairings or stream-lining parts not otherwise provided for (protective garments [A41D 13/00](#); crash helmets [A42B 3/00](#); hoods or fairings for sidecars [B62K](#))

**B62J 17/02** • shielding only the ~~rider's~~ ~~rider's~~ front

**Project: N/A (B62K)**

**B62K** CYCLES; CYCLE FRAMES; CYCLE STEERING DEVICES; RIDER-OPERATED TERMINAL CONTROLS SPECIALLY ADAPTED FOR CYCLES; CYCLE AXLE SUSPENSIONS; CYCLE SIDE-CARS, FORECARS, OR THE LIKE

NOTE

In this subclass, each of the main groups [B62K 7/00](#) to [B62K 15/00](#) takes precedence over all the preceding main groups, e.g. a ~~child's~~ ~~child's~~ bicycle is classified in [B62K 9/00](#) and not in [B62K 3/00](#)

**Project: N/A (B62M)**

**U B62M 1/00** Rider propulsion of wheeled vehicles (rider propulsion with additional source of power [B62M 6/00](#); propulsion by ground-engaging rods [B62M 29/02](#))

NOTE

Groups [B62M 1/12](#)-[B62M 1/34](#) correspond to IPC2013.01

**B62M 1/18** • by movement of ~~rider's~~ ~~rider's~~ saddle

**U B62M 7/00** Motorcycles characterised by position of motor or engine (rider propulsion with addition source of power, e.g. auxiliary combustion engine or electric motor [B62M 6/00](#); frames characterised by position of engine [B62K 11/00](#))

**U B62M 7/14** • with the engine on an auxiliary wheeled unit, e.g. trailer, sidecar (trailers [B60P](#), [B62D](#); sidecars [B62K 27/00](#))

**B62M 7/16** • • {with wheel of unit driven by the engine}

**U B62M 11/00** Transmissions characterised by the use of inter-engaging toothed wheels or frictionally-engaging wheels (with roller engaging the periphery of ground wheel [B62M 13/00](#))

**U B62M 11/04** • of changeable ratio

**U B62M 11/06** • • with spur gear wheels ([B62M 11/14](#) takes precedence)

**B62M 11/08** • • • {with a radially-shiftable intermediate gear wheel}



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

- U B63B 13/00** Conduits for emptying or ballasting; Self-bailing equipment; Scuppers (draining means for hatches [B63B 19/26](#); centrifugal bilge-water separators [B04](#); {arrangements of installations for treating ballast water [B63J 4/002](#); } pipes in general [F16L](#))
- B63B 13/02 • Ports for passing water through vessels' sides {(jet propulsors with clogging prevention means [B63H 11/01](#))}
- U B63B 27/00** Loading or unloading cargo or passengers (self-discharging barges or lighters [B63B 35/30](#); shore-based [B65G](#) {elevators, escalators or moving walkways per se [B66B](#); floating cranes [B66C 23/52](#); loading or unloading devices per se, see the relevant subclasses, e.g. [B65G](#), [B66C](#), [B67D](#)})
- WARNING
- The scope of this group is broader than the scope of the corresponding IPC group, and includes the scope of the IPC2 subgroups [B63B 27/02](#), [B63B 27/06](#), and [B63B 27/20](#)
- B63B 27/02 • {with intermittent action}
- B63B 27/04 • • Ships' derricks, i.e. employing ships' masts (derricks in general [B66C](#))
- B63B 27/20 • {with continuous action}
- U B63B 39/00** Equipment to decrease pitch, roll, or like unwanted vessel movements; Apparatus for indicating vessel attitude {(for amphibious vehicles [B60F 3/0038](#))}
- B63B 39/005 • {Equipment to decrease ship's vibrations produced externally to the ship, e.g. wave-induced vibrations (propulsion mountings for anti-vibration purposes [B63H 21/30](#); vibration dampers, suppression of vibration in systems [F16F](#))}
- U B63B 45/00** Arrangement or adaptation of signalling or lighting devices (arrangement of signalling or lighting devices, the mounting or supporting thereof or circuits therefor, for vehicles in general [B60Q](#); life-buoys, -belts, -jackets, -suits or the like, characterised by signalling means [B63C 9/20](#); lighting devices or systems therefor [F21L](#), [F21S](#))
- WARNING
- Not complete, pending a reorganisation; see [B63C 9/21](#)
- B63B 45/06 • the devices being intended to illuminate vessels' decks or interior
- B63B 2701/00** Building of the ship's hull

**Project: N/A (B63C)**

- U B63C 11/00** Equipment for dwelling or working underwater; Means for searching for underwater objects (composition of chemical substances for use in breathing apparatus [A62D 9/00](#); swimming aids or equipment [A63B 31/00](#) to [A63B 35/00](#); submarines [B63G 8/00](#))
- B63C 11/02 • Divers' equipment
- B63C 11/30 • • Ballast {(weights worn on user's body for exercising [A63B 21/065](#))}
- B63C 11/46 • Divers' sleds or like craft, i.e. craft on which man in diving-suit rides {(devices fixed to the body of a swimmer, e.g. diver, or held in his hands, and propelling the swimmer by muscle power or by a motor [A63B 35/00](#))}

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

- U B63H 1/00** Propulsive elements directly acting on water (jet propulsion [B63H 11/00](#); attachment of propellers on shafts [B63H 23/34](#))

- U B63H 1/02      • of rotary type (endless-track type [B63H 1/34](#))
- U B63H 1/12      • • with rotation axis substantially in propulsive direction
- U B63H 1/14      • • • Propellers (pitch changing [B63H 3/00](#))
- WARNING  
this group is pending a reorganisation; also documents covered by group [B63H 1/15](#) are within this group]
- U B63H 1/26      • • • • Blades
- B63H 1/265      • • • • {each blade being constituted by a surface enclosing an empty space, e.g. forming a closed loop}
- U B63H 16/00      Effecting propulsion by muscle power (swimming frameworks, {i.e. apparatus fixed to or held by the swimmer or diver} with swimmer-operated driving mechanism [A63B 35/00](#); land-based training equipment for rowing or sculling [A63B 69/06](#))**
- U B63H 16/08      • Other apparatus for converting muscle power into propulsive effort (general features of propulsion elements, see the relevant groups)
- B63H 16/12      • • {using hand levers, cranks, pedals, or the like, e.g. water cycles, boats propelled by boat-mounted pedal cycles}
- WARNING  
This group is no longer used for classification of new documents as from 01.01.2012. The backlog of this group is being continuously reclassified to groups [B63H 16/16](#) to [B63H 16/20](#)
- B63H 16/14      • • • {for propelled drive}
- WARNING  
This group is no longer used for classification of new documents as from 01.01.2012. The backlog of this group is being continuously reclassified to groups [B63H 16/16](#) to [B63H 16/20](#)
- U B63H 21/00      Use of propulsion power plant or units on vessels (use of outboard propulsion units [B63H 20/00](#); hull reinforcements for carrying propulsion power plant or units [B63B 3/70](#); {propulsion of submarines [B63G 8/08](#); } propulsion power plant or units per se, see the relevant classes)**
- NOTE  
This group comprises arrangements of propulsion power plant or units on vessels and to some extent it includes adaptations of such plant or units to facilitate such arrangements
- WARNING  
this group is pending a reorganisation; also documents covered by group [B63H 21/36](#) are within this group
- B63H 21/24      • {the vessels being small craft, e.g. racing boats}

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

- U B64D 1/00      Dropping, ejecting, releasing, or receiving articles, liquids, or the like, in flight (with respect to weapon sights devices [F41G](#) takes precedence, parachutes per se [B64D 17/00](#); ejectable seats [B64D 25/10](#); ejectable capsules [B64D 25/12](#); refuelling during flight [B64D 39/00](#); launching apparatus for projecting projectiles or missiles [F41F 1/00](#), [F41F 7/00](#); rocket or torpedo launchers [F41F 3/00](#))**
- B64D 1/22      • Taking-up articles from ~~earth`s~~[earth's](#) surface

- U B64D 11/00** **Passenger or crew accomodation; Flight-deck installations not otherwise provided for**
- B64D 11/003 • {Stowage devices for passengers; personal luggage}

**Project: MP0124 (B64D)**

- U B64D 45/00** **Aircraft indicators or protectors not otherwise provided for (camouflage F41H 3/00)**
- M B64D 2045/0075** • {~~Flight bags, including~~ Adaptations for use of electronic ~~type~~ flight bags in aircraft; Supports therefor in the cockpit}

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

- B64D 45/04 • Landing aids; Safety measures to prevent collision with ~~earth's~~ earth's surface

**Project: N/A (B64G)**

**B64G** **COSMONAUTICS; VEHICLES OR EQUIPMENT THEREFOR (apparatus for, or methods of, winning materials from extraterrestrial sources E21C 51/00)**

NOTES

1. This subclass covers only vehicles, equipment or the like, which are specially adapted for cosmonautics.
2. This subclass does not cover vehicles and equipment applicable to both cosmonautics and aeronautics, which are covered by the appropriate aeronautical subclasses of class [B64](#).
3. In this subclass, the following term is used with the meaning indicated:
  - "cosmonautics" includes all transport outside the ~~earth's~~ earth's atmosphere, and thus includes artificial earth satellites, and interplanetary and interstellar travel.

- U B64G 1/00** **Cosmonautic vehicles**
- U B64G 1/22** • Parts of, or equipment specially adapted for fitting in or to, cosmonautic vehicles
- U B64G 1/24** • • Guiding or controlling apparatus, e.g. for attitude control (jet-propulsion plants [F02K](#); navigation or navigational instruments, see the relevant subclass, e.g. [G01C](#); automatic pilots [G05D 1/00](#))
- B64G 1/32 • • using ~~earth's~~ earth's magnetic field
- B64G 1/62 • • Systems for re-entry into the ~~earth's~~ earth's atmosphere; Retarding or landing devices

Project: N/A (B65D)

B65D

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

#### NOTES

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]
6. In this subclass, the following terms or expressions are used with the meanings indicated:
  - "rigid or semi-rigid containers" includes:
    - a. containers not deformed by, or not taking-up the shape of, their contents;
    - b. containers adapted to be temporarily deformed to expel their contents;
    - c. pallets;
    - d. trays;
  - "flexible containers" includes:
    - a. containers deformed by, or taking-up the shape of, their contents;
    - b. containers adapted to be permanently deformed to expel their contents;
  - "packaging elements" includes:
    - a. elements, other than containers, for covering, protecting, stiffening, or holding together articles or materials to be stored or transported;

- b. packaging materials of special type or form not provided for in other subclasses;
- "packages" includes:
  - a. combination of containers or packaging elements with articles or materials to be stored or transported;
  - b. articles joined together for convenience of storage or transport;
- "paper" includes materials, e.g. cardboard, plastic sheet materials, laminated materials, or metal foils, worked in a manner analogous to paper;
- "large containers", in groups [B65D 88/00](#) or [B65D 90/00](#), means containers having about the size of containers used in container traffic, sometimes referred to as freight, forwarding or "ISO" (International Standardization) containers, or larger containers [3]

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](#) [5]

#### WARNING

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

<a href="#">B65D 5/34</a>	covered by	<a href="#">B65D 5/325</a>	
<a href="#">B65D 5/35</a>	covered by	<a href="#">B65D 5/32</a>	
<a href="#">B65D 5/355</a>	covered by	<a href="#">B65D 5/0005</a>	
<a href="#">B65D 5/43</a>	covered by	<a href="#">B65D 5/42</a>	
<a href="#">B65D 5/462</a>	covered by	<a href="#">B65D 5/46008</a>	to
<a href="#">B65D 5/46032</a>			
<a href="#">B65D 5/465</a>	covered by	<a href="#">B65D 5/46008</a>	to
<a href="#">B65D 5/46032</a>			
<a href="#">B65D 5/468</a>	covered by	<a href="#">B65D 5/4608</a>	
<a href="#">B65D 5/472</a>	covered by	<a href="#">B65D 5/46048</a>	
<a href="#">B65D 5/475</a>	covered by	<a href="#">B65D 5/46008</a>	
<a href="#">B65D 5/478</a>	covered by	<a href="#">B65D 5/46056</a>	
<a href="#">B65D 5/4805</a>	-	<a href="#">B65D 5/489</a>	covered by
<a href="#">B65D 5/48002</a>			
<a href="#">B65D 5/49</a>	-	<a href="#">B65D 5/499</a>	covered by
<a href="#">B65D 5/48024</a>			
<a href="#">B65D 5/63</a>	covered by	<a href="#">B65D 5/72</a>	
<a href="#">B65D 6/00</a>	-	<a href="#">B65D 6/40</a>	covered by
<a href="#">B65D 7/00</a> ,	<a href="#">B65D 9/00</a> ,	<a href="#">B65D 11/00</a> ,	<a href="#">B65D 15/00</a>
<a href="#">B65D 8/00</a>	-	<a href="#">B65D 8/22</a>	covered by
<a href="#">B65D 7/00</a> ,	<a href="#">B65D 9/00</a> ,	<a href="#">B65D 11/00</a> ,	<a href="#">B65D 15/00</a>
<a href="#">B65D 19/22</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups			
<a href="#">B65D 19/24</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups			
<a href="#">B65D 19/26</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups			
<a href="#">B65D 19/28</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups			
<a href="#">B65D 19/30</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups			
<a href="#">B65D 19/31</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups			
<a href="#">B65D 19/34</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups			
<a href="#">B65D 17/28</a>	-	<a href="#">B65D 17/48</a> ,	<a href="#">B65D 17/52</a>
covered by	<a href="#">B65D 17/16</a>	to	<a href="#">B65D 17/26</a>

<a href="#">B65D 19/32</a>	covered by	<a href="#">B65D 19/0002</a> ,
<a href="#">B65D 19/0004</a>		
<a href="#">B65D 21/024</a>	covered by	<a href="#">B65D 21/0201</a>
<a href="#">B65D 21/028</a>	covered by	<a href="#">B65D 21/0204</a>
<a href="#">B65D 21/032</a>	covered by	<a href="#">B65D 21/0211</a>
<a href="#">B65D 21/036</a>	covered by	<a href="#">B65D 21/0217</a>
<a href="#">B65D 25/26</a>	covered by	<a href="#">B65D 81/02</a>
<a href="#">B65D 30/00</a>	-	<a href="#">B65D 30/28</a> covered by
<a href="#">B65D 29/00</a> ,	<a href="#">B65D 31/00</a>	
<a href="#">B65D 33/17</a>	covered by	<a href="#">B65D 33/1633</a>
<a href="#">B65D 33/36</a>	covered by	<a href="#">B65D 75/58</a>
<a href="#">B65D 33/38</a>	covered by	<a href="#">B65D 75/5861</a>
<a href="#">B65D 35/48</a>	-	<a href="#">B65D 35/54</a> covered by
<a href="#">B65D 47/2018</a>		
<a href="#">B65D 39/18</a>	covered by	<a href="#">B65D 39/00</a>
+s.gr.		
<a href="#">B65D 41/01</a>	covered by	<a href="#">B65D 41/00</a>
<a href="#">B65D 43/03</a>	covered by	<a href="#">B65D 43/00</a> +
<a href="#">B65D 2543/00027</a>		
<a href="#">B65D 47/22</a>	covered by	<a href="#">B65D 47/20</a>
<a href="#">B65D 47/34</a>	covered by	<a href="#">B05B 11/00</a>
<del>B65D 50/06</del> <a href="#">B65D 50/06</a>	covered by	
<a href="#">B65D 50/08</a>	covered by	<a href="#">B65D 55/02</a>
<a href="#">B65D 50/10</a>	covered by	<a href="#">B65D 55/02</a>
<a href="#">B65D 50/12</a>	covered by	<a href="#">B65D 55/02</a>
<a href="#">B65D 50/14</a>	covered by	<a href="#">B65D 55/02</a>
<a href="#">B65D 65/26</a>	-	<a href="#">B65D 65/32</a> covered by
<a href="#">B65D 75/58</a>		
<a href="#">B65D 65/34</a>	covered by	<a href="#">B65D 75/66</a>
<a href="#">B65D 65/36</a>	covered by	<a href="#">B65D 75/58</a>
<a href="#">B65D 71/52</a>	-	<a href="#">B65D 71/68</a> covered by
<a href="#">B65D 71/0003</a>	to	<a href="#">B65D 71/0077</a>
<a href="#">B65D 75/60</a>	-	<a href="#">B65D 75/64</a> covered by
<a href="#">B65D 75/58</a>		
<a href="#">B65D 81/15</a>	covered by	<a href="#">B65D 81/05</a>
<a href="#">B65D 81/17</a>	covered by	<a href="#">B65D 81/02</a>
<a href="#">B65D 83/18</a>	-	<del>B65D 83/74</del> <a href="#">B65D 83/74</a> covered by
<a href="#">B65D 83/14</a> ,	<a href="#">B65D 83/16</a>	
<a href="#">B65D 83/18</a>	covered by	<a href="#">B65D 83/201</a>
<a href="#">B65D 83/58</a>	covered by	<a href="#">B65D 83/44</a>
<a href="#">B65D 83/76</a>	covered by	<a href="#">B65D 83/0005</a>
<a href="#">B65D 85/57</a>	covered by	<a href="#">G11B 23/00</a>
<a href="#">B65D 85/575</a>	covered by	<a href="#">G11B 23/00</a>
<a href="#">B65D 85/86</a>	-	<a href="#">B65D 85/90</a> covered by
<a href="#">H01L 21/00</a> ,	<a href="#">H05K 13/00</a>	
<a href="#">B65D 91/00</a>	covered by	<a href="#">A47G 29/12</a>

**U B65D 17/00**

Containers specially constructed to be opened by cutting or piercing, or by tearing of frangible member or portion (opening devices for containers made by winding, bending, or folding paper [B65D 3/00](#), [B65D 5/00](#); frangible inner closure members associated with caps, lids, or covers [B65D 51/20](#); opening devices added or incorporated during filling or closing of containers [B65D 77/30](#); separate devices for opening closed containers [B67B 7/00](#))

- B65D 17/02 • {of curved cross-section, e.g. cans of circular or elliptical cross-section}
- B65D 17/04 • {of polygonal cross-section}



- B65D 17/06 · {Integral, or permanently secured, end or side closures}
- B65D 17/08 · · {Closures secured by folding or rolling and pressing}
- B65D 17/10 · · · {with interposed packing rings}
- B65D 17/12 · · {Closures secured by soldering, welding, or otherwise uniting opposed surfaces}
- B65D 17/14 · · · {by cold or hot pressing of plastic sealing material}
- U B65D 17/16 · Opening arrangements or devices incorporated in or attached to, containers {(B65D 17/50 takes precedence)}
- B65D 17/18 · · {Attached can-cutting devices}
- B65D 17/20 · · {Tearing-strips or -wires}
- B65D 17/22 · · · {with tongues or tags for engagement by slotted keys}
- B65D 17/24 · · {Lines of weakness}
- B65D 17/26 · · {Attachments of slotted keys to preserving cans or tins}

**Project: MP0123 (B65D)**

- M B65D 83/00** Containers or packages with special means for dispensing contents (dispensing means incorporated in removable or non-permanently secured container closures [B65D 47/00](#); for shops, stores, offices, bars, or the like [A47F 1/04](#); showcases or cabinets with dispensing arrangements [A47F 3/02](#); {for surgical articles [A61B 19/026](#)}; magazines for screws or nuts in combination with spanners, wrenches or screw-drivers [B25B 23/06](#); nail dispensers [B25C 3/00](#); for use in connection with the handling of sheets, webs, or filamentary material [B65H](#); coin deliverers [G07D 1/00](#); {coin-freed apparatus for dispensing discrete articles [G07F 11/00](#)})

**WARNING**

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

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

- U B65D 85/00** Containers, packaging elements or packages specially adapted for particular articles or materials ([B65D 71/00](#), [B65D 83/00](#) take precedence; hand implements, travelling equipment [A45C](#); cosmetic or toilet equipment [A45D](#); {for surgical instruments or appliances [A61B 19/026](#)}; containers specially adapted for medical or pharmaceutical purposes [A61J 1/00](#); paint cans [B44D 3/12](#); oil cans [F16N 3/04](#); containers for carrying smallarms [F41C 33/06](#); packaging of ammunition or explosive charges [F42B 39/00](#); containers for record carriers, specially adapted for co-operation with the recording or reproducing apparatus [G11B 23/00](#))

**NOTE**

Attention is drawn to Note (4) following the title of this subclass

- B65D 85/54 · {for articles of special shape not otherwise provided for}
- B65D 85/70 · {for materials not otherwise provided for}
- U B65D 2215/00** **Child-proof means**
- B65D 2215/06 · based on the difference in size between ~~children`s~~[children's](#) and adults` hands

**Project: MP0124 (B65F)**

- M B65F 2240/00** Types of refuse ~~receptacles~~[collected](#)

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

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

**WARNING**

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

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

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

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

**NOTES**

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.:

<a href="#">B07C</a>	Postal sorting, similar sorting of documents, e.g. cheques
<a href="#">B08B 1/02</a>	Cleaning travelling work, e.g. webs, by methods involving the use of tools, brushes or like members
<a href="#">B21B 41/00</a>	Metal rolling involving guiding, conveying or accumulating easily-flexible work, e.g. wire, sheet metal bands, in loops or curves
<a href="#">B21C 47/00</a> ,	Winding-up, coiling, winding-off or temporarily
<a href="#">B21C 49/00</a>	accumulating metal wire, metal band or other flexible metal material, characterised by

features relevant to metal processing only,  
other than by rolling  
[B21D 43/00](#) Feeding, positioning or storing  
devices,  
combined with, or arranged in, or specially  
adapted for use in connection with, apparatus  
for working or processing sheet metal without  
essentially removing material  
[B23K 9/12](#) Means for automatic feeding of electrodes  
for  
spot or seam welding or cutting  
[B29C 31/00](#) Handling for shaping or joining of  
plastics, for  
shaping of substances in a plastic state in  
general or for after-treatment of shaped  
products, e.g. feeding the material to be shaped  
[B41B 15/32](#), Film-handling mechanisms in  
photographic  
[B41B 21/32](#) composing machines  
[B41F 13/02](#) Conveying or guiding webs through  
rotary  
printing presses or machines  
[B41J 11/00](#) to Handling of copy- or impression-transfer  
material  
[B41J 17/00](#) in typewriters or selective printing  
mechanisms  
[B41K 3/44](#) Means for handling copy matter in stamping  
or  
numbering apparatus or devices  
[B41L](#) Handling sheets or webs in apparatus or  
devices  
for manifolding, duplicating or printing for  
office or other commercial purposes, or on  
addressing machines or like series-printing  
machines  
[B42B](#) Handling relating to permanently  
attaching  
together sheets, quires, or signatures  
[B42C](#) Handling sheets in book-binding  
[B65B](#) Handling of sheets or webs in apparatus for,  
or  
methods of, packaging articles, not of interest  
apart from their application in packaging  
machines  
[B65C](#) Handling of labels in labelling or  
tagging  
apparatus  
[C14B 1/62](#) Winding or stacking hides or leather  
in  
machines or devices for manufacturing leather  
[D01](#) to [D07](#) Spinning, weaving, braiding, lace-  
making,  
knitting, sewing, making ropes or cables  
[D21F 2/00](#) Transferring webs from wet ends to  
press  
sections in paper-making  
[F26B 13/00](#) Handling fabrics, fibres, yarns or  
other  
material in long lengths in drying apparatus  
[G03B](#) Film-strip handling or handling of  
pictures  
in apparatus for taking photographs or for  
projecting or viewing them

[G06K 13/00](#) Conveying record carriers from one station to another  
[G06M 7/00](#) Counting of flat articles, e.g. sheets, carried by a conveyer  
[G11B 15/00](#) to Information storage based on relative movement  
[G11B 19/00](#), between record carrier and transducer,  
[G11B 23/00](#), involving handling record carriers for  
[G11B 25/00](#) recording or reproducing  
[H01F 41/06](#) Manufacturing coils for magnets, inductances, transformers, by winding  
[H01G 13/02](#) Machines for winding capacitors  
[H04N 1/00](#) Sheet handling not of interest apart from its use in systems for transmission or reproduction of pictures or patterns not varying in time, e.g. facsimile transmission

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 83/00](#), [B65H 83/02](#) [B65H 83/02](#)  
 covered by [B07C 1/025](#), [G07D 11/00](#) and s.gr  
 - [B65H 85/00](#) [B65H 85/00](#) covered by [G03B 27/62](#),  
[G03B 27/6264](#), [G03B 27/6257](#)

Project: MP0124 (B65H)

U [B65H 2408/00](#) Specific machines  
 U [B65H 2408/20](#) • for handling web(s)  
 U [B65H 2408/23](#) • • Winding machines

- M B65H 2408/232      · · · Winding ~~bed~~~~beds~~ *consisting* of two ~~rolls~~~~rollers~~
- M B65H 2408/2324      · · · · The winding ~~rolls~~~~rollers~~ having different properties

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

- U B66B 9/00      **Kinds or types of lifts in, or associated with, buildings or other structures (characterised by control systems [B66B 1/00](#); apparatus for raising or lowering persons on stages of theatres [A63J 5/12](#))**
- U B66B 9/06      · inclined, e.g. serving blast furnaces
- U B66B 9/08      · · associated with stairways, e.g. for transporting disabled persons {(facilitating access of invalids to vehicles [A61G 3/02](#))}
- U B66B 2009/0876      · · · {Details}
- B66B 2009/0892      · · · · {Seats~~⁻~~ constructional features}

**Project: N/A (B66C)**

- U B66C 11/00      **Trolleys or crabs, e.g. operating above runways (runways, tracks or trackways therefor [B66C 7/00](#); winch mechanisms [B66D](#))**
- B66C 11/02      · with operating gear or ~~operator's~~~~operator's~~ cabin suspended, or laterally offset, from runway or track
- U B66C 13/00      **Other constructional features or details**
- B66C 13/52      · Details of compartments for driving engines or motors or of ~~operator's~~~~operator's~~ stands or cabins
- B66C 13/54      · · ~~Operator's~~~~Operator's~~ stands or cabins
- U B66C 23/00      **Cranes comprising essentially a beam, boom, or triangular structure acting as a cantilever and mounted for translatory of swinging movements in vertical or horizontal planes or a combination of such movements, e.g. jib-cranes, derricks, tower cranes (base supporting structures with legs [B65C 5/00](#))**
- B66C 23/54      · {with pneumatic or hydraulic motors, e.g. for actuating jib-cranes on tractors}
- B66C 23/56      · · {of the reciprocating type}
- U B66C 23/60      · Derricks
- B66C 23/605      · · {employing ships~~⁻~~ masts ([B66C 23/525](#) takes precedence)}

**Project: N/A (B67B)**

- U B67B 7/00      **Hand- or power-operated devices for opening closed containers (nail pullers or extractors [B25C 11/00](#); {for expelling solid content, e.g. pills, from blister packs [B65B 69/0058](#)}; attached to, or incorporated in, containers or container closures [B65D](#); {dispensers for pills from blister packs [B65B 69/0058](#)})**
- B67B 7/24      · {Hole-piercing devices}
- B67B 7/26      · · {combined with spouts}
- B67B 7/28      · · · {and associated with receptacle hodlers}
- B67B 7/38      · {Power-operated cutting devices (machines for domestic use with a plurality of interchangeable units [A47J 43/06](#), [A47J 44/00](#))}

**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](#)[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](#)[car's](#) silhouette, reference marks}

**Project: N/A (B68C)**

- U B68C 1/00** Saddling equipment for riding- or pack-animals
- U B68C 1/16      • Fastening stirrups to saddles; Stirrup-leathers (stirrups [B68C 3/00](#))
- B68C 1/18      • • with safety arrangements for loosening the connection between stirrup and saddle, e.g. in case of [rider's](#)[rider's](#) fall

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

- U C01B 33/00** Silicon; Compounds thereof ({[C01B 6/00](#)}, [C01B 21/00](#), [C01B 23/00](#) take precedence; persilicates [C01B 15/14](#); carbides [C01B 31/36](#))
- U C01B 33/20      • Silicates (persilicates [C01B 15/14](#); {containing aluminium [C01B 33/26](#)})
- U C01B 33/26      • • Aluminium-containing silicates, {i.e. silico-aluminates}
- C01B 33/28      • • • {Base exchange silicates, e.g. zeolites (regeneration [B01J 49/00](#))}
- U C01B 33/2807      • • • • {Zeolitic silicoaluminates with a tridimensional crystalline structure possessing molecular sieve properties; Isomorphous compounds wherein a part of the aluminium ore of the silicon present may be replaced by other elements such as gallium, germanium, phosphorus; Preparation of zeolitic molecular sieves from molecular sieves of another type or from preformed reacting mixtures (not used, see subgroups)}
- C01B 33/2815      • • • • • {of type A (UNION CARBIDE trade name; corresponds to [GRACE's](#)[GRACE's](#) types Z-12 or Z-12L)}
- C01B 33/2838      • • • • • {of faujasite type, or type X or Y (UNION CARBIDE trade names; correspond to [GRACE's](#)[GRACE's](#) types Z-14 and Z-14HS, respectively)}
- C01B 33/32      • • Alkali metal silicates ({[C01B 33/24](#)}, [C01B 33/26](#) take precedence)}



**U C01B 39/00**

Compounds having molecular sieve and base-exchange properties, e.g. crystalline zeolites; Their preparation; After-treatment, e.g. ion-exchange or dealumination (treatment to modify the sorption properties, e.g. shaping using a binder, [B01J 20/10](#); treatment to modify the catalytic properties, e.g. combination of treatments to make the zeolites appropriate to their use as a catalyst, [B01J 29/04](#); treatment to improve the ion-exchange properties [B01J 39/14](#); regeneration or reactivation of ion-exchange properties [B01J 49/00](#); preparation of stabilised suspensions used in detergents [C11D 3/12](#))

**NOTES**

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

- "zeolites" means:
  - i. crystalline aluminosilicates with base-exchange and molecular sieve properties, having three dimensional, microporous lattice framework structure of tetrahedral oxide units;
  - ii. compounds isomorphous to those of the former category, wherein the aluminium or silicon atoms in the framework are partly or wholly replaced by atoms of other elements, e.g. by gallium, germanium, phosphorus or boron.

2. Compounds classified in main group [C01B 39/00](#) are also classified in other groups of class [C01](#) according to their composition

C01B 39/54

- Phosphates, e.g. APO or SAPO compounds

**NOTE**

Phosphates having either a poorly defined or a weak base-exchange capacity such as [MAPO's](#) [MAPO's](#), [SAPO's](#) [SAPO's](#) or [BAPO's](#) [BAPO's](#) are classified in [C01B 37/00](#)

**Project: MP0123 (C01G)****M C01G**

**COMPOUNDS CONTAINING METALS NOT COVERED BY SUBCLASSES [C01D](#) OR [C01F](#)** (metal hydrides {monoborane, diborane or addition complexes thereof} [C01B 6/00](#); salts of oxyacids of halogens [C01B 11/00](#); peroxides, salts or peroxyacids [C01B 15/00](#); thiosulfates, dithionites, polythionates [C01B 17/64](#); compounds containing selenium, or tellurium [C01B 19/00](#); binary compounds of nitrogen with metals [C01B 21/06](#); azides [C01B 21/08](#); {compounds containing nitrogen, other non-metals and metal [C01B 21/082](#)}; metal amides [C01B 21/092](#); nitrites [C01B 21/50](#); {compounds of noble gases [C01B 23/0005](#)}; phosphides [C01B 25/08](#); salts of oxyacids of phosphorus [C01B 25/16](#); carbides [C01B 31/30](#); compounds containing silicon [C01B 33/00](#); compounds containing boron [C01B 35/00](#); compounds having molecular sieve properties but not having base-exchange properties [C01B 37/00](#); compounds having molecular sieve and base-exchange properties, e.g. crystalline zeolites, [C01B 39/00](#); cyanides [C01C 3/08](#); salts of cyanamide [C01C 3/16](#); thiocyanates [C01C 3/20](#))

**WARNING**

~~Groups C01G 51/30 to C01G 51/70 and C01G 53/40 to C01G 53/70 do not correspond to former or current IPC groups. The concordance CPC-IPC is as follows: — C01G 51/30 — C01G 51/70 : C01G 51/00 — C01G 53/40 — C01G 53/70 : C01G 53/00~~

**Project: N/A (C01G)****U C01G 30/00**

**Compounds of antimony**

**U C01G 30/006**

- {Halides ([C01G 30/001](#) takes precedence)}

C01G 30/007

- • {of binary type SbX<sub>3</sub> or SbX<sub>5</sub> with X representing a halogen, or mixed of the type SbX<sub>3</sub>X<sub>2</sub> with X,X' representing different halogens}

**Project: N/A (C02F)****U C02F 11/00****Treatment of sludge; Devices therefor**

U C02F 11/12

- by de-watering, drying, or thickening

U C02F 11/121

- • {Processes for mechanical dehydration of sludge, e.g. by filters}

C02F 11/122

- • • {using press filters (C02F 11/123 takes precedence)}

C02F 11/123

- • • {using belt or band filters}

C02F 11/125

- • • {using screw filters}

C02F 11/126

- • • {using drum filters}

C02F 11/127

- • • {by centrifugation}

C02F 11/128

- • • {Batch processes}

**U C02F 2101/00****Nature of the contaminant**

C02F 2101/003

- {Explosive compounds, e.g. TNT}

C02F 2101/006

- {Radioactive compounds}

U C02F 2101/10

- Inorganic compounds

C02F 2101/101

- • {Sulfur compounds}

C02F 2101/103

- • {Arsenic compounds}

C02F 2101/105

- • {Phosphorus compounds}

C02F 2101/106

- • {Selenium compounds}

C02F 2101/108

- • {Boron compounds}

U C02F 2101/16

- Nitrogen compounds, e.g. ammonia

C02F 2101/163

- • • {Nitrates}

C02F 2101/166

- • • {Nitrites}

U C02F 2101/20

- Heavy metals or heavy metal compounds

C02F 2101/203

- • • {Iron or iron compound}

C02F 2101/206

- • • {Manganese or manganese compounds}

U C02F 2101/30

- Organic compounds

C02F 2101/301

- • {Detergents, surfactants}

C02F 2101/303

- • {Complexing agents}

C02F 2101/305

- • {Endocrine disruptive agents}

C02F 2101/306

- • {Pesticides}

C02F 2101/308

- • {Dyes; Colorants; Fluorescent agents}

U C02F 2101/32

- Hydrocarbons, e.g. oil

C02F 2101/322

- • • {Volatile compounds, e.g. benzene}

C02F 2101/325

- • • {Emulsions}

C02F 2101/327

- • • {Polyaromatic Hydrocarbons (PAH's)}

U C02F 2101/34

- • containing oxygen

C02F 2101/345

- • • {Phenols}

U C02F 2101/36

- • containing halogen

C02F 2101/363

- • • PCB's {PCB's; PCP's PCP's}

C02F 2101/366

- • • {Dioxine; Furan}

**U C02F 2103/00****Nature of the water, waste water, sewage or sludge to be treated**

	C02F 2103/001	• {Runoff or storm water}
	C02F 2103/002	• {Grey water, e.g. from clothes washers, showers or dishwashers}
	C02F 2103/003	• {Wastewater from hospitals, laboratories and the like, heavily contaminated by pathogenic microorganisms}
	C02F 2103/005	• {Black water originating from toilets}
	C02F 2103/006	• {Dental effluents}
	C02F 2103/007	• {Contaminated open waterways, rivers, lakes or ponds}
	C02F 2103/008	• {Originating from marine vessels, ships and boats, e.g. bilge water or ballast water}
U	C02F 2103/02	• Non-contaminated water, e.g. for industrial water supply
	C02F 2103/023	• • {Water in cooling circuits}
	C02F 2103/026	• • {Treating water for medical or cosmetic purposes}
U	C02F 2103/32	• from the food or foodstuff industry, e.g. brewery waste waters
	C02F 2103/322	• • {from vegetable oil production, e.g. olive oil production}
	C02F 2103/325	• • {from processes relating to the production of wine products}
	C02F 2103/327	• • {from processes relating to the production of dairy products}
U	C02F 2103/34	• from industrial activities not provided for in groups <a href="#">C02F 2103/12</a> to <a href="#">C02F 2103/32</a>
	C02F 2103/343	• • {from the pharmaceutical industry, e.g. containing antibiotics}
	C02F 2103/346	• • {from semiconductor processing, e.g. waste water from polishing of wafers}
U	C02F 2103/36	• • from the manufacture of organic compounds
	C02F 2103/365	• • • {from petrochemical industry (e.g. refineries)}

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

**LIME, MAGNESIA; SLAG; CEMENTS; COMPOSITIONS THEREOF, e.g. MORTARS, CONCRETE OR LIKE BUILDING MATERIALS; ARTIFICIAL STONE {(roofing granules [E04D 7/005](#)); CERAMICS (devitrified glass-ceramics [C03C 10/00](#)); REFRACTORIES; TREATMENT OF NATURAL STONE**

**NOTES**

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

- "fillers" includes pigments, aggregates and fibrous reinforcing materials;
- "active ingredients" includes processing aids or property improvers, e.g. grinding aids used after the burning process or used in the absence of a burning process;
- "mortars", "concrete" and "artificial stone" are to be considered as a single group of materials, and therefore, in the absence of an indication to the contrary, they include mortar, concrete and other cementitious compositions.

2. In groups [C04B 7/00](#) to [C04B 32/00](#), in the absence of an indication to the contrary, classification is made in the last appropriate place.

3. A composition classified in groups [C04B 26/00](#) or [C04B 28/00](#) is also classified in groups [C04B 14/00](#) to [C04B 24/00](#) if a filler or active ingredient is of interest.

4. In groups [C04B 2/00](#) to [C04B 32/00](#) and [C04B 38/00](#) to [C04B 41/00](#) it is desirable to classify the individual constituents of the mixtures, or other aspects relating to the mixtures or constituents, using Combination Sets with symbols chosen from groups [C04B 2/00](#) to [C04B 41/00](#).

5. In groups [C04B 2/00](#) to [C04B 32/00](#) and [C04B 38/00](#) to [C04B 41/00](#) it is desirable to classify the function of the individual constituents of the

mixtures, or other aspects relating to the properties or uses of the mixtures or products obtained, using Combination Sets with symbols chosen from groups [C04B 2103/00](#) to [C04B 2111/00](#).

6. Groups [C04B 20/123](#) and [C04B 20/126](#) are used for indexing purposes only of documents classified in [C04B 20/12](#)

#### WARNING

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

[C04B 5/02](#) covered by [B01J 2/00](#),  
[C21B 3/06](#)  
~~[C04B 33/132](#)~~ [C04B 33/132](#) to ~~[C04B 33/138](#)~~ [C04B 33/138](#)  
 covered by [C04B 33/13](#)  
[C04B 35/035](#) covered by [C04B 35/26](#)  
 +s.gr.  
[C04B 35/567](#), [C04B 35/569](#), [C04B 35/576](#),  
[C04B 35/577](#) covered by [C04B 35/565](#), [C04B 35/571](#)  
 to [C04B 35/575](#), [C04B 35/806](#)  
[C04B 35/582](#) covered by [C04B 35/581](#),  
[C04B 35/806](#)  
[C04B 35/5833](#), [C04B 35/5835](#) covered by  
[C04B 35/583](#), [C04B 35/806](#)  
[C04B 35/586](#), [C04B 35/587](#), [C04B 35/594](#),  
[C04B 35/596](#) covered by [C04B 35/584](#), [C04B 35/589](#)  
 to [C04B 35/5935](#), [C04B 35/806](#)  
[C04B 35/599](#) covered by [C04B 35/597](#)  
[C04B 35/81](#) covered by [C04B 35/78](#)  
[C04B 35/84](#) covered by [C04B 35/628](#),  
[C04B 35/78](#)

#### U C04B 11/00

#### Calcium sulfate cements

C04B 11/05

- obtaining anhydrite, {e.g. ~~Keene's~~ [Keene's](#) cement} ([C04B 11/028](#) takes precedence)

#### Project: MP0124 (C04B)

#### U C04B 18/00

**Use of agglomerated or waste materials or refuse as fillers for mortars, concrete or artificial stone (use of waste materials for the manufacture of cement [C04B 7/24](#)); Treatment of agglomerated or waste materials or refuse, specially adapted to enhance their filling properties in mortars, concrete or artificial stone**

#### NOTE

Fillers with a well defined shape other than granular are considered to be reinforcing elements and thus are classified in [E04C 5/00](#). However, if they are only characterised by their composition, classification is made in [C04B](#) only

U C04B 18/02

- Agglomerated materials, {e.g. artificial aggregates}

M C04B 18/027

- {Lightweight ~~material~~ [materials](#) ([C04B 14/12](#) takes precedence)}

M C04B 18/028

- {~~temporarily~~ [temporarily](#) agglomerated, e.g. agglomerates which fall apart during mixing with the other mortar or concrete ingredients}

- U C04B 20/00** Use of materials as fillers for mortars, concrete or artificial stone according to more than one of groups [C04B 14/00](#) to [C04B 18/00](#) and characterised by shape or grain distribution; Treatment of materials according to more than one of the groups [C04B 14/00](#) to [C04B 18/00](#) specially adapted to enhance their filling properties in mortars, concrete or artificial stone; Expanding or defibrillating materials

NOTE

Fillers with a well-defined shape other than granular are considered to be reinforcing elements and thus are classified in [E04C 5/00](#). However, if they are only characterised by their composition, classification is made in [C04B](#) only

- U C04B 20/0076** • {characterised by the grain distribution}
- M C04B 20/008** • • {Micro- or nanosized fillers, e.g. ~~micronised fillers~~ *micronised fillers* with particle size smaller than that of the hydraulic binder (~~colloidal silica~~ *colloidal silica* [C04B 14/062](#); [colloidal silica](#) [C04B 14/062](#); silica fume [C04B 18/146](#))}
- M C04B 22/00** Use of inorganic materials as active ingredients for mortars, concrete or artificial stone, e.g. accelerators; {~~shrink~~, *shrinkage* compensating agents}
- U C04B 22/002** • {Water}
- M C04B 22/004** • • {containing dissolved additives or active agents, i.e. ~~aqueous~~ *aqueous* solutions used as gauging water ([C04B 22/0026](#) takes precedence)}
- M C04B 26/00** Compositions of mortars, concrete or artificial stone, containing only organic binders; {, e.g. polymer or resin concrete (mechanical aspects *of* moulding polymer or resin concrete [B29C 67/242](#))}

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

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

NOTE

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

- U C04B 28/14** • containing calcium sulfate cements {(gypsum-paper plates [E04C](#))}
- C04B 28/16** • • containing anhydrite, {e.g. ~~Keene`s~~ *Keene's* cement}

**Project: MP0124 (C04B)**

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

NOTE

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

- M C04B 38/0006** • {Honeycomb structures (from one or more corrugated sheets by winding or ~~stocking~~ *stacking* [C04B 38/0083](#))}

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

- U C04B 2103/00** Function or property of ingredients for mortars, concrete or artificial stone
- C04B 2103/0001** • {Living organisms, e.g. micro-organisms, or enzymes}

- C04B 2103/0002 . . {Seeds}
- C04B 2103/0003 . {Unintentionally added compounds, such as impurities in raw materials, e.g. alkali sulfates in construction grade cement}
- C04B 2103/0004 . {Compounds chosen for the nature of their cations}
- C04B 2103/0005 . . {Organic ammonium compounds}
- C04B 2103/0006 . . {Alkali metal or inorganic ammonium compounds}
- C04B 2103/0007 . . . {K}
- C04B 2103/0008 . . . {Li}
- C04B 2103/0009 . . . {Inorganic ammonium compounds}
- C04B 2103/001 . . {Alkaline earth metal or Mg-compounds}
- C04B 2103/0011 . . . {Ba}
- C04B 2103/0012 . . . {Mg}
- C04B 2103/0013 . . {Iron group metal compounds}
- C04B 2103/0014 . . . {Fe}
- C04B 2103/0015 . . {Noble metal or copper compounds}
- C04B 2103/0016 . . . {Cu}
- C04B 2103/0017 . . {Refractory metal compounds}
- C04B 2103/0018 . . . {Cr}
- C04B 2103/0019 . . . {Ti}
- C04B 2103/002 . . {Compounds of elements having a valency of 2}
- C04B 2103/0021 . . {Compounds of elements having a valency of 3}
- C04B 2103/0022 . . {Compounds of elements having a valency of 4}
- C04B 2103/0023 . . {Compounds of elements having a valency of 5}
- C04B 2103/0024 . . {Compounds of elements having a valency of 6}
- C04B 2103/0025 . . {Compounds of the transition metals}
- C04B 2103/0026 . {Compounds of unusual isotopes, e.g. heavy water}
- C04B 2103/0027 . {Standardised cement types}
- C04B 2103/0028 . . {according to API}
- C04B 2103/0029 . . . {Type A}
- C04B 2103/003 . . . {Type B}
- C04B 2103/0031 . . . {Type C}
- C04B 2103/0032 . . . {Type D}
- C04B 2103/0033 . . . {Type E}
- C04B 2103/0034 . . . {Type F}
- C04B 2103/0035 . . . {Type G}
- C04B 2103/0036 . . . {Type H}
- C04B 2103/0037 . . . {Type J}
- C04B 2103/0038 . . . {Type K}
- C04B 2103/0039 . . {according to ASTM}
- C04B 2103/004 . . {according to DIN}
- C04B 2103/0041 . {Non-polymeric ingredients chosen for their physico-chemical characteristics}
- C04B 2103/0042 . . {Amorphous materials}
- C04B 2103/0043 . . {Compounds chosen for their specific Moh's Moh's hardness}
- C04B 2103/0044 . . {Compounds chosen for their abrasion resistance, e.g. determined according to the L.A. test}



- C04B 2103/0045     • {Polymers chosen for their physico-chemical characteristics}
- C04B 2103/0046     • • {added as monomers or as oligomers}

**Project: MP0124 (C04B)**

- M   C04B 2103/0047     • • • {as a mixture of monomers and prepolymers or oligomers}

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

- C04B 2103/0048     • • • {as oligomers}
- C04B 2103/0049     • • {Water-swellable polymers}
- C04B 2103/005     • • • {Alkali-swellable polymers}
- C04B 2103/0051     • • {Water-absorbing polymers, hydrophilic polymers}
- C04B 2103/0052     • • {Hydrophobic polymers}
- C04B 2103/0053     • • {Water-soluble polymers}
- C04B 2103/0054     • • {Water dispersible polymers}
- C04B 2103/0055     • • {Water-insoluble polymers}
- C04B 2103/0056     • • {Thermohardening polymers}
- C04B 2103/0057     • • {added as redispersable powders}
- C04B 2103/0058     • • {Core-shell polymers}
- C04B 2103/0059     • • {Graft (co-)polymers}
- C04B 2103/006     • • • {Comb polymers}
- C04B 2103/0061     • • {Block (co-)polymers}
- C04B 2103/0062     • • {Cross-linked polymers}
- C04B 2103/0063     • • {obtained by an unusual polymerisation process, e.g. by changing the molar ratio of the different monomers during the polymerisation process (C04B 2103/0058 to C04B 2103/0061 take precedence)}
- C04B 2103/0064     • • {Polymers unstable in the presence of hydraulic binders, e.g. polymers flocculating in concrete mixtures}
- C04B 2103/0065     • • {Polymers characterised by their glass transition temperature (Tg)}
- C04B 2103/0066     • • {Film forming polymers}
- C04B 2103/0067     • {the ingredients being formed in situ by chemical reactions or conversion of one or more of the compounds of the composition}
- C04B 2103/0068     • {Ingredients with a function or property not provided for elsewhere in C04B 2103/00}
- C04B 2103/0069     • • {the ingredients being characterised by their physical state}
- C04B 2103/007     • • • {Supercritical fluids}
- C04B 2103/0071     • • {Phase-change materials, e.g. latent heat storage materials used in concrete compositions}
- C04B 2103/0072     • • {Biodegradable materials}
- C04B 2103/0073     • • {Self-degrading materials, e.g. materials undergoing a hydrolytic degradation in the course of time}
- C04B 2103/0074     • • {Anti-static agents}
- C04B 2103/0075     • • {Anti-dusting agents}
- C04B 2103/0076     • • {Deodorizing agents}
- C04B 2103/0077     • • {Packaging material remaining in the mixture after the mixing step, e.g. soluble bags containing active ingredients}
- C04B 2103/0078     • • {Sorbent materials}
- C04B 2103/0079     • • {Rheology influencing agents}

- C04B 2103/008 . . {Flocking or deflocking agents}
- C04B 2103/0081 . . . {Deflocking agents}
- C04B 2103/0082 . . {Segregation-preventing agents; Sedimentation-preventing agents}
- C04B 2103/0083 . . . {Bleeding-preventing agents}
- C04B 2103/0084 . . {Polyelectrolytes}
- C04B 2103/0085 . . {Thixotropic agents}
- C04B 2103/0086 . . {Chelating or complexing agents}
- C04B 2103/0087 . . {Ion-exchanging agents}
- C04B 2103/0088 . . {Compounds chosen for their latent hydraulic characteristics, e.g. pozzuolanes}

**NOTE**

Code [C04B 2103/0088](#) is only used when the chemical nature of the latent hydraulic material is not specified, when no specific group in subclass [C04B](#) exists for defining the material or when it is chosen from an important number of alternatives.

- C04B 2103/0089 . . {Agents for reducing heat of hydration}
- C04B 2103/009 . . {Anhydrous vehicles for hydraulic cement compositions}
- C04B 2103/0091 . . {Organic co-binders for mineral binder compositions}
- C04B 2103/0092 . . . {for improving green strength}
- C04B 2103/0093 . . {Organic cosolvents}
- C04B 2103/0094 . . {Agents for altering or buffering the pH; Ingredients characterised by their pH}
- C04B 2103/0095 . . {Oxidising agents}
- C04B 2103/0096 . . {Reducing agents}
- C04B 2103/0097 . . {Anion- and far-infrared-emitting materials}
- C04B 2103/0098 . . {Radioactive materials}
- C04B 2103/0099 . . {Aspecific ingredients, i.e. high number of alternative specific compounds mentioned for the same function or property}
- U C04B 2103/10 . . Accelerators; Activators
- C04B 2103/105 . . {for reactions involving organo-silicon compounds}
- U C04B 2103/30 . . Water reducers, plasticisers, air-entrainers, flow improvers
- C04B 2103/302 . . {Water reducers}
- C04B 2103/304 . . {Air-entrainers}
- C04B 2103/306 . . {Fluidisers with reduced air-entraining effect}
- C04B 2103/308 . . {Slump-loss preventing agents}
- C04B 2103/34 . . {Flow improvers}
- U C04B 2103/40 . . Surface-active agents, dispersants
- C04B 2103/402 . . {anionic}
- C04B 2103/404 . . {cationic}
- C04B 2103/406 . . {non-ionic}
- C04B 2103/408 . . {Dispersants}
- U C04B 2103/44 . . Thickening, gelling or viscosity increasing agents
- C04B 2103/445 . . {Gelling agents}
- U C04B 2103/46 . . Water-loss or fluid-loss reducers, hygroscopic or hydrophilic agents, water retention agents
- C04B 2103/465 . . {Water-sorbing agents, hygroscopic or hydrophilic agents}

- U C04B 2103/56 · Opacifiers
- C04B 2103/58 · · {Shrinkage reducing agents}
- U C04B 2103/60 · Agents for protection against chemical, physical or biological attack
- C04B 2103/601 · · {Agents for increasing frost resistance}
- C04B 2103/603 · · {Agents for controlling alkali-aggregate reactions}
- C04B 2103/605 · · {UV-stabilising agents}
- C04B 2103/606 · · {Agents for neutralising  $\text{Ca}(\text{OH})_2$  liberated during cement hardening}
- C04B 2103/608 · · {Anti-oxidants}
- U **C04B 2111/00** **Mortars, concrete or artificial stone or mixtures to prepare them, characterised by specific function, property or use**
  - C04B 2111/00008 · {Obtaining or using nano-technology related materials}
  - C04B 2111/00017 · {Aspects relating to the protection of the environment}
  - C04B 2111/00025 · {Aspects relating to the protection of the health, e.g. materials containing special additives to afford skin protection (avoiding chromium eczema by using chromium VI-free or very low chromium VI-content materials [C04B 2111/1081](#))}
  - C04B 2111/00034 · {Physico-chemical characteristics of the mixtures}
  - C04B 2111/00043 · · {Anhydrous mixtures}

NOTE  
Code [C04B 2111/00043](#) is only used in combination with groups [C04B 26/00](#) to [C04B 26/32](#).

  - C04B 2111/00051 · · {Mortar or concrete mixtures with an unusual low cement content, e.g. for foundations}
  - C04B 2111/0006 · · · {for obtaining materials with the consistency of soil}
  - C04B 2111/00068 · · {Mortar or concrete mixtures with an unusual water/cement ratio}
  - C04B 2111/00077 · · {Partially hardened mortar or concrete mixtures}
  - C04B 2111/00086 · · {Mixtures with prolonged pot-life}
  - C04B 2111/00094 · · {Sag-resistant materials}
  - C04B 2111/00103 · · {Self-compacting mixtures}
  - C04B 2111/00112 · · {Mixtures characterised by specific pH values}
  - C04B 2111/0012 · · {Thixotropic mixtures}
  - C04B 2111/00129 · · {Extrudable mixtures}
  - C04B 2111/00137 · · {Injection moldable mixtures}
  - C04B 2111/00146 · · {Sprayable or pumpable mixtures}
  - C04B 2111/00155 · · · {Sprayable, i.e. concrete-like, materials able to be shaped by spraying instead of by casting, e.g. gunitite}
  - C04B 2111/00163 · · · · {by the dry process}
  - C04B 2111/00172 · · · · {by the wet process}
  - C04B 2111/00181 · · {Mixtures specially adapted for three-dimensional printing (3DP), stereolithography or prototyping}
  - C04B 2111/00189 · · {Compositions or ingredients of the compositions characterised by analysis-spectra, e.g. NMR}
  - C04B 2111/00198 · · {Characterisation or quantities of the compositions or their ingredients expressed as mathematical formulae or equations}
  - C04B 2111/00206 · · {Compositions defined by their elemental analysis}
  - C04B 2111/00215 · · {Mortar or concrete mixtures defined by their oxide composition}
  - C04B 2111/00224 · · {Green materials, e.g. porous green ceramic preforms}

- C04B 2111/00232     . . {Temporary foams}
- C04B 2111/00241     . {Physical properties of the materials not provided for elsewhere in [C04B 2111/00](#)}
- C04B 2111/0025     . . {Compositions or ingredients of the compositions characterised by the crystal structure}
- C04B 2111/00258     . . {Electromagnetic wave absorbing or shielding materials}
- C04B 2111/00267     . . {Materials permeable to vapours or gases}
- C04B 2111/00275     . . {Materials impermeable to vapours or gases}
- C04B 2111/00284     . . {Materials permeable to liquids}
- C04B 2111/00293     . . {Materials impermeable to liquids}
- C04B 2111/00301     . . {Non-porous materials, e.g. macro-defect free [MDF] products}
- C04B 2111/0031     . . {Heavy materials, e.g. concrete used as ballast material}
- C04B 2111/00318     . . {Materials characterised by relatively small dimensions, e.g. small thickness}
- C04B 2111/00327     . . . {for obtaining micro-structures}
- C04B 2111/00336     . . {Materials with a smooth surface, e.g. obtained by using glass-surfaced moulds}
- C04B 2111/00344     . . {Materials with friction-reduced moving parts, e.g. ceramics lubricated by impregnation with carbon}
- C04B 2111/00353     . . . {Sliding parts}
- C04B 2111/00362     . . {Friction materials, e.g. used as brake linings, anti-skid materials}
- C04B 2111/0037     . . {Materials containing oriented fillers or elements}
- C04B 2111/00379     . . . {the oriented elements being fibres}
- C04B 2111/00387     . . {Anisotropic materials}
- C04B 2111/00396     . . . {only the surface part being anisotropic}
- C04B 2111/00405     . . {Materials with a gradually increasing or decreasing concentration of ingredients or property from one layer to another}
- C04B 2111/00413     . . {Materials having an inhomogeneous concentration of ingredients or irregular properties in different layers}
- C04B 2111/00422     . . {Magnetic properties}
- C04B 2111/00431     . {Refractory materials}
- C04B 2111/00439     . {Physico-chemical properties of the materials not provided for elsewhere in [C04B 2111/00](#)}
- C04B 2111/00448     . . {Low heat cements}
- C04B 2111/00456     . . {Odorless cements}
- C04B 2111/00465     . . {Heat conducting materials}
- C04B 2111/00474     . {Uses not provided for elsewhere in [C04B 2111/00](#)}
- C04B 2111/00482     . . {Coating or impregnation materials}
- C04B 2111/00491     . . . {Primers}
- C04B 2111/005     . . . {for frescos}
- C04B 2111/00508     . . . {Cement paints}
- C04B 2111/00517     . . . {for masonry}
- C04B 2111/00525     . . . {for metallic surfaces}
- C04B 2111/00534     . . . {for plastic surfaces, e.g. polyurethane foams}
- C04B 2111/00543     . . . {for wet surfaces}
- C04B 2111/00551     . . . {Refractory coatings, e.g. for tamping}
- C04B 2111/0056     . . . {for ship decks}

- C04B 2111/00568 . . . {Multiple coating with same or similar material}
- C04B 2111/00577 . . . {applied by spraying (mixtures shapable by spraying [C04B 2111/00155](#))}
- C04B 2111/00586 . . {Roofing materials}
- C04B 2111/00594 . . . {Concrete roof tiles}
- C04B 2111/00603 . . {Ceiling materials}
- C04B 2111/00612 . . {as one or more layers of a layered structure}
- C04B 2111/0062 . . . {Gypsum-paper board like materials}
- C04B 2111/00629 . . . . {the covering sheets being made of material other than paper}
- C04B 2111/00637 . . {as glue or binder for uniting building or structural materials}
- C04B 2111/00646 . . . {Masonry mortars}
- C04B 2111/00655 . . {Profiles}
- C04B 2111/00663 . . {as filling material for cavities or the like}
- C04B 2111/00672 . . . {Pointing or jointing materials}
- C04B 2111/00681 . . . . {of the drying type}
- C04B 2111/00689 . . . . {of the setting type}
- C04B 2111/00698 . . . {for cavity walls}
- C04B 2111/00706 . . . {around pipelines or the like}
- C04B 2111/00715 . . {for fixing bolts or the like}
- C04B 2111/00724 . . {in mining operations, e.g. for backfilling; in making tunnels or galleries}
- C04B 2111/00732 . . {for soil stabilisation}
- C04B 2111/00741 . . . {Preventing erosion}
- C04B 2111/0075 . . {for road construction}
- C04B 2111/00758 . . {for agri-, sylvi- or piscicultural or cattle-breeding applications}
- C04B 2111/00767 . . {for waste stabilisation purposes}
- C04B 2111/00775 . . . {the composition being used as waste barriers or the like, e.g. compositions used for waste disposal purposes only, but not containing the waste itself}
- C04B 2111/00784 . . . {for disposal only}
- C04B 2111/00793 . . {as filters or diaphragms}
- C04B 2111/00801 . . . {Membranes; Diaphragms}
- C04B 2111/0081 . . {as catalysts or catalyst carriers}
- C04B 2111/00818 . . . {Enzyme carriers}
- C04B 2111/00827 . . . {Photocatalysts; (Materials containing photocatalysts to avoid staining by air pollutants [C04B 2111/2061](#))}
- C04B 2111/00836 . . {for medical or dental applications}
- C04B 2111/00844 . . {for electronic applications}
- C04B 2111/00853 . . {in electrochemical cells or batteries, e.g. fuel cells}
- C04B 2111/00862 . . {for nuclear applications, e.g. ray-absorbing concrete}
- C04B 2111/0087 . . {for metallurgical applications}
- C04B 2111/00879 . . . {Non-ferrous metallurgy}
- C04B 2111/00887 . . . {Ferrous metallurgy}
- C04B 2111/00896 . . {as prepregs}
- C04B 2111/00905 . . {as preforms}

**Project: MP0124 (C04B)**

- M C04B 2111/00913 . . . {as ceramic preforms for the fabrication of metal matrix comp, e.g. cermets}

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

- C04B 2111/00922 . . . . {Preforms as such}
- C04B 2111/00931 . . . . {Coated or infiltrated preforms, e.g. with molten metal}
- C04B 2111/00939 . . {for the fabrication of moulds or cores}
- C04B 2111/00948 . . {for the fabrication of containers}
- C04B 2111/00956 . . {for making sculptures or artistic casts}
- C04B 2111/00965 . . {for household applications, e.g. use of materials as cooking ware}
- C04B 2111/00974 . . {for pyrotechnic applications, e.g. blasting}
- C04B 2111/00982 . . {as construction elements for space vehicles or aeroplanes}
- C04B 2111/00991 . . {for testing}
- U C04B 2111/10 . . Compositions or ingredients thereof characterised by the absence or the very low content of a specific material
  - C04B 2111/1006 . . {Absence of well-defined organic compounds}
  - C04B 2111/1012 . . . . {Organic solvents}
  - C04B 2111/1018 . . . {Gypsum free or very low gypsum content cement compositions}
  - C04B 2111/1025 . . . {Alkali-free or very low alkali-content materials}
  - C04B 2111/1031 . . . {Lime-free or very low lime-content materials}
  - C04B 2111/1037 . . . {Cement free compositions, e.g. hydraulically hardening mixtures based on waste materials, not containing cement as such}
  - C04B 2111/1043 . . . . {Calciumaluminate-free refractories}
  - C04B 2111/105 . . . {Alumina-free or very low alumina-content materials}
  - C04B 2111/1056 . . . {Silica-free or very low silica-content materials}
  - C04B 2111/1062 . . . {Halogen free or very low halogen-content materials}
  - C04B 2111/1068 . . . . {Halogens other than chlorine}
  - C04B 2111/1075 . . . {Chromium-free or very low chromium-content materials}
  - C04B 2111/1081 . . . . {Chromium VI, e.g. for avoiding chromium eczema (materials containing special additives for affording skin protection [C04B 2111/00025](#))}
  - C04B 2111/1087 . . . {Carbon free or very low carbon content fly ashes; Fly ashes treated to reduce their carbon content or the effect thereof}
  - C04B 2111/1093 . . . . {Reducing the effect of the carbon content, without removing the carbon}
- U C04B 2111/12 . . . Absence of mineral fibres, e.g. asbestos
  - C04B 2111/125 . . . . {Mineral fibres other than asbestos}
- U C04B 2111/20 . . Resistance against chemical, physical or biological attack
  - C04B 2111/2007 . . . {Avoiding unauthorised or unwanted use or treatment}
  - C04B 2111/2015 . . . {Sulfate resistance}
  - C04B 2111/2023 . . . {Resistance against alkali-aggregate reaction}
  - C04B 2111/203 . . . {Oil-proof or grease-repellant materials}
  - C04B 2111/2038 . . . {Resistance against physical degradation}
  - C04B 2111/2046 . . . . {Shock-absorbing materials}
  - C04B 2111/2053 . . . . {Earthquake- or hurricane-resistant materials}
  - C04B 2111/2061 . . . . {Materials containing photocatalysts, e.g. TiO<sub>2</sub>, for avoiding staining by air pollutants or the like}
  - C04B 2111/2069 . . . . {Self cleaning materials, e.g. using lotus effect (using photocatalysts [C04B 2111/2061](#))}
  - C04B 2111/2076 . . . . {Discolouring resistant materials (self cleaning materials [C04B 2111/2069](#))}



- C04B 2111/2084 . . {Thermal shock resistance}
- C04B 2111/2092 . . {Resistance against biological degradation}
- U C04B 2111/26 . . Corrosion of reinforcement resistance
- C04B 2111/265 . . . {Cathodic protection of reinforced concrete structures}
- U C04B 2111/27 . . Water resistance, e.g. waterproof or water-repellant materials
- C04B 2111/275 . . . {Making materials water insoluble}
- U C04B 2111/28 . . Fire resistance, i.e. materials resistant to accidental fires or high temperatures
- C04B 2111/285 . . . {Intumescent materials}
- C04B 2111/29 . . {Frost-thaw resistance}
- U C04B 2111/32 . Expansion-inhibited materials
- C04B 2111/325 . . {the expansion being inhibited in one direction only}
- U C04B 2111/34 . Non-shrinking or non-cracking materials
- C04B 2111/343 . . {Crack resistant materials}
- C04B 2111/346 . . {Materials exhibiting reduced plastic shrinkage cracking}
- U C04B 2111/50 . Flexible or elastic materials

NOTE

- "flexibility" means ability to bend without breaking;
- "elasticity" means property to resist and recover from deformation produced by a force.

- C04B 2111/503 . . {Elastic materials}
- C04B 2111/506 . . {Bendable material}
- U C04B 2111/54 . Substitutes for natural stone, artistic materials or the like
- C04B 2111/542 . . {Artificial natural stone}
- C04B 2111/545 . . . {Artificial marble}
- C04B 2111/547 . . {Imitating ancient compositions, e.g. mediaeval mortars; Compositions specially designed for restauration of ancient buildings or building elements}
- U C04B 2111/72 . Repairing or restoring existing buildings or building materials
- C04B 2111/723 . . {Repairing reinforced concrete}
- C04B 2111/726 . . {by chemical conversion of unwanted deposits, e.g. for the restauration of marble monuments}
- U C04B 2111/76 . Use at unusual temperatures, e.g. sub-zero
- C04B 2111/763 . . {High temperatures}
- C04B 2111/766 . . {Low temperatures, but above zero}
- U C04B 2111/80 . Optical properties, e.g. transparency or reflexivity
- C04B 2111/802 . . {White cement}
- C04B 2111/805 . . {Transparent material}
- C04B 2111/807 . . {Luminescent or fluorescent materials}
- U C04B 2111/90 . Electrical properties
- C04B 2111/905 . . {Anti-static materials}

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

- U C07C 61/00** **Compounds having carboxyl groups bound to carbon atoms of rings other than six-membered aromatic rings**  
**NOTE**  
 The oxidation mixture of naphthenes containing naphthenic acids, is classified in [C07C 61/005](#)
- C07C 61/005 • {Naphthenic acids}
- U C07C 63/00** **Compounds having carboxyl groups bound to a carbon atom of six-membered aromatic rings**
- U C07C 63/33 • Polycyclic acids
- U C07C 63/331 • • with all carboxyl groups bound to non-condensed rings
- C07C 63/333 • • • 4,4'-Diphenyldicarboxylic acids
- U C07C 209/00** **Preparation of compounds containing amino groups bound to a carbon skeleton**
- C07C 209/60 • by condensation or addition reactions, e.g. Mannich reaction, addition of ammonia or amines to alkenes or to alkynes or addition of compounds containing an active hydrogen atom to Schiff's bases, quinone imines, or aziranes
- U C07C 273/00** **Preparation of urea or its derivatives, i.e. compounds containing any of the groups**  

$$\begin{array}{c} \text{O} \\ \parallel \\ >\text{N}-\text{C}-\text{N}< \end{array}, \begin{array}{c} \text{N}- \\ \parallel \\ >\text{N}-\text{C}-\text{O}- \end{array} \text{ or } \begin{array}{c} \text{N}- \\ \parallel \\ >\text{N}-\text{C}-\text{Hal} \end{array}, \text{ the nitrogen atoms not being part of nitro or nitroso groups}$$
- U C07C 273/18 • of substituted ureas
- U C07C 273/1809 • • {with formation of the N-C(O)-N moiety}
- C07C 273/1818 • • • {from -N=C=O and  $\text{XNR}'\text{R}''\text{XNR}'\text{R}''$ }

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

- U C07F 9/00** **Compounds containing elements of the 5th Group of the Periodic System**
- U C07F 9/02 • Phosphorus compounds (sugar phosphates [C07H 11/04](#); nucleotides [C07H 19/00](#), [C07H 21/00](#); nucleic acids [C07H 21/00](#))
- U C07F 9/28 • • with one or more P-C bonds
- U C07F 9/38 • • • Phosphonic acids  $\text{RP}(=\text{O})(\text{OH})_2$ ; Thiophosphonic acids {i.e.  $\text{RP}(=\text{X})(\text{XH})_2$  (X = S, Se)}
- U C07F 9/40 • • • Esters thereof
- U C07F 9/4003 • • • • {the acid moiety containing a substituent or a structure which is considered as characteristic}
- U C07F 9/4056 • • • • • {Esters of arylalkanephosphonic acids ([C07F 9/4025](#) takes precedence)}
- C07F 9/4059 • • • • • • { $\text{n-C}(=\text{O})-(\text{CH}_2)_m\text{-Ar}$ , (X, Y = O, S, Se;  $\text{n} \geq 1$ ,  $\text{m} \geq 0$ )}

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

- U C07K 5/00** **Peptides containing up to four amino acids in a fully defined sequence; Derivatives thereof**
- U C07K 5/02 • containing at least one abnormal peptide link
- C07K 5/0207 • • {containing the structure  $-\text{NH}(\text{X})_4-\text{C}(=\text{O})$ , e.g. isosters, replacing two amino acids}

- U C07K 14/00** **Peptides having more than 20 amino acids; Gastrins; Somatostatins; Melanotropins; Derivatives thereof**
- U C07K 14/005** **from viruses**
- NOTE**  
When classifying in this group, subject-matter related to viral proteins shall be classified by the symbol [C07K 14/005](#) together with (a number of) appropriate indexing codes out of [C12N 2710/00-C12N 2795/00](#)
- WARNING**  
1. From March 15, 2012 groups [C07K 14/01](#) - [C07K 14/19](#) and subgroups thereof are no longer used for the classification of new documents. 2. Reclassification of the back-file follows the principle outlined in the Note here above
- U C07K 14/01** **• • DNA viruses**
- U C07K 14/03** **• • • Herpetoviridae, e.g. pseudorabies virus**
- C07K 14/055** **• • • • Marek's disease virus**
- U C07K 14/435** **• from animals; from humans**
- U C07K 14/46** **• • from vertebrates**
- U C07K 14/47** **• • • from mammals**
- U C07K 14/4701** **• • • • {not used}**
- C07K 14/4711** **• • • • {Alzheimer's disease; Amyloid plaque core protein}**

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

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

**WARNING**

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

- [C08B 37/06](#) covered by [C08B 37/0045](#)
- [C08B 37/10](#) covered by [C08B 37/0075](#)
- [C08B 37/12](#) covered by [C08B 37/0039](#)

- U C08B 30/00** **Preparation of starch, degraded or non-chemically modified starch, amylose, or amylopectin**
- U C08B 30/04** **• Extraction or purification**
- C08B 30/042** **• • {from cereals or grains}**
- C08B 30/044** **• • • {from corn or maize}**
- C08B 30/046** **• • • {from wheat}**
- C08B 30/048** **• • {from potatoes}**
- U C08B 37/00** **Preparation of polysaccharides not provided for in groups [C08B 1/00](#) to [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 37/0051      • • {beta-D-Fructofuranans, e.g. beta-2,6-D-fructofuranan, i.e. levan; Derivatives thereof}
- C08B 37/0054      • • • {Inulin, i.e. beta-2,1-D-fructofuranan}; Derivatives thereof}}

**Project: MP0124 (C08F)****U C08F 4/00      Polymerisation catalysts (catalysts in general [B01J](#))**NOTES

1. Group [C08F 4/00](#) and subgroups can be incomplete according to the following classification rules:

- if a catalyst is specifically used for only one type of polymer, it is not classified in [C08F 4/00](#);
- in such a case, the classification symbol of [C08F 4/00](#) providing for the catalyst may be used as a symbol for a C-Set in the groups providing for the polymer, e.g. ( [C08F 12/04](#), [C08F 4/62](#) )
- this method of classification is applied only when a note after the group providing for the polymer explicitly indicates which symbols of [C08F 4/00](#) may be used for forming the C-set.

2. When classifying in group [C08F 4/00](#), the type of catalyst can be further indexed by using indexing codes chosen from [C08F 2410/00](#), [C08F 2420/00](#) or their subgroups

- U C08F 4/42      • Metals; Metal hydrides; Metallo-organic compounds; Use thereof as catalyst precursors
- U C08F 4/44      • • selected from light metals, zinc, cadmium, mercury, copper, silver, gold, boron, gallium, indium, thallium, rare earths or actinides
- U C08F 4/60      • • • together with refractory metals, iron group metals, platinum group metals, manganese, rhenium {technetium} or compounds thereof

NOTES

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

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

- U C08F 4/619      • • • Component covered by group [C08F 4/60](#) containing a transition metal-carbon bond {([C08F 4/60003](#) - [C08F 4/60196](#) take precedence)}
- M C08F 4/6192      • • • • {containing at least one cyclopentadienyl ring, ~~fe~~~~condensed~~~~condensed~~ or not, e.g. an indenyl or a fluorenyl ring}
- U C08F 4/62      • • • • Refractory metals or compounds thereof

NOTE

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

- U C08F 4/622      • • • • Component covered by group [C08F 4/62](#) with an organo-aluminium compound {([C08F 4/62003](#) - [C08F 4/62196](#) take precedence)}
- M C08F 4/6228      • • • • • {with an ~~alumoxane~~~~aluminoxane~~, i.e. a compound containing an ~~-Al-O-Al-~~ group}
- M C08F 4/63      • • • • • Pretreating the metal or compound covered by group [C08F 4/62](#) before the final contacting with the metal or compound ~~covered~~~~covered~~ by group [C08F 4/44](#) {([C08F 4/62003](#) - [C08F 4/62196](#) take precedence)}
- U C08F 4/632      • • • • • Pretreating with metals or metal-containing compounds
- M C08F 4/638      • • • • • • {with metals or metal-containing compounds, not provided for in ~~asingle~~~~a single~~ group of groups [C08F 4/633](#) to [C08F 4/637](#)}

- U C08F 4/64 . . . . Titanium, zirconium, hafnium or compounds thereof
- NOTE  
Group [C08F 4/64003](#) takes precedence over groups [C08F 4/642](#) to [C08F 4/659](#)
- U C08F 4/642 . . . . . Component covered by group [C08F 4/64](#) with an organo-aluminium compound {([C08F 4/64003](#) - [C08F 4/64196](#) take precedence)}
- M C08F 4/6428 . . . . . {with an **alumoxane****aluminoxane**, i.e. a compound containing an -Al-o-Al- group}

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

- U C08F 22/00 Homopolymers and copolymers of compounds having one or more unsaturated aliphatic radicals each having only one carbon-to-carbon double bond, and at least one being terminated by a carboxyl radical and containing at least one other carboxyl radical in the molecule; Salts, anhydrides, esters, amides, imides or nitriles thereof**
- U C08F 22/36 . Amides or imides
- U C08F 22/38 . Amides
- C08F 22/385 . . {Monomers containing two or more (meth)acrylamide groups, e.g. N,N'-methylenebisacrylamide}
- U C08F 122/00 Homopolymers of compounds having one or more unsaturated aliphatic radicals each having only one carbon-to-carbon double bond, and at least one being terminated by a carboxyl radical and containing at least one other carboxyl radical in the molecule; Salts, anhydrides, esters, amides, imides or nitriles thereof**
- U C08F 122/36 . Amides or imides
- U C08F 122/38 . Amides
- C08F 122/385 . . {Monomers containing two or more (meth)acrylamide groups, e.g. N,N'-methylenebisacrylamide}

**Project: MP0124 (C08F)**

- M C08F 222/00 Copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a carboxyl radical and containing at least one other carboxyl radical in the molecule; Salts, anhydrides, esters, amides, imides, or nitriles thereof**

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

- U C08F 222/36 . Amides or imides
- U C08F 222/38 . Amides
- C08F 222/385 . . {Monomers containing two or more (meth)acrylamide groups, e.g. N,N'-methylenebisacrylamide}

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

- U C08G 18/00 Polymeric products of isocyanates or isothiocyanates (preparatory processes of porous or cellular materials, in which the monomers or catalysts are not specific [C08J](#))**
- U C08G 18/06 . with compounds having active hydrogen
- U C08G 18/08 . Processes
- C08G 18/14 . . {Manufacture of cellular products}

- U C08G 18/70      • • characterised by the isocyanates or isothiocyanates used
- U C08G 18/72      • • • Polyisocyanates or polyisothiocyanates
- U C08G 18/74      • • • • cyclic
- U C08G 18/76      • • • • • aromatic
- U C08G 18/7614    • • • • • • {containing only one aromatic ring}
- U C08G 18/7628    • • • • • • • {containing at least one isocyanate or isothiocyanate group linked to the aromatic ring by means of an aliphatic group}
- C08G 18/765      • • • • • • • {alpha, alpha, alpha, alpha, -tetraalkylxylylene diisocyanate or homologues substituted on the aromatic ring}

**U C08G 65/00      Macromolecular compounds obtained by reactions forming an ether link in the main chain of the macromolecule**

- U C08G 65/02      • form cyclic ethers by opening of the heterocyclic ring
- U C08G 65/26      • • from cyclic ethers and other compounds
- U C08G 65/2642    • • • {characterised by the catalyst used}

**NOTES**

1. In this group classification is made according to the metal in the compounds, if any
2. In this group boron is considered a metal and magnesium as an alkaline earth metal

- U C08G 65/2645    • • • • {Metals or compounds thereof, e.g. salts}
- C08G 65/2663    • • • • • {Metal cyanide catalysts, i.e. **DMC's** **DMC's**}

**Project: MP0123 (C08G)**

**M C08G 77/00      Macromolecular compounds obtained by reactions forming a linkage containing silicon with or without sulfur, nitrogen, oxygen or carbon in the main chain of the macromolecule**

**WARNING**

Groups C08G 77/70 – C08G 77/80 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - C08G 77/70: C08G 77/04 – C08G 77/80: C08G 77/04

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

**U C08G 2101/00      Foams**

- C08G 2101/0008    • {flexible}
- C08G 2101/0016    • {semi-rigid}
- C08G 2101/0025    • {rigid}
- C08G 2101/0033    • {having integral skins}
- C08G 2101/0041    • {having specified density}
- C08G 2101/005      • • {< 50 kg/m}
- C08G 2101/0058    • • {> 50 and < 150 kg/m}
- C08G 2101/0066    • • {> 150 Kg/m including micro-cellular foams}
- C08G 2101/0075    • {prepared with an isocyanate index of 60 or lower}
- C08G 2101/0083    • {prepared using water as the sole blowing agent}
- C08G 2101/0091    • {Aerogels; Xerogels}



**Project: N/A (C08J)****U C08J 9/00**

**Working-up of macromolecular substances to porous or cellular articles or materials; After-treatment thereof (mechanical aspects [B29C 44/00](#); foamed polymeric products of isocyanates or isothiocyanates characterised by the monomers or catalysts used [C08G 18/00](#))**

C08J 9/0061

- {characterized by the use of several polymeric components}

**Project: N/A (C08K)****U C08K 5/00**

**Use of organic ingredients**

**U C08K 5/36**

- Sulfur-, selenium-, or tellurium-containing compounds {([C08K 5/0091](#) takes precedence)}

**U C08K 5/37**

- • Thiols

C08K 5/372

- • • Sulfides, {e.g.  $R-(S)_x-R^1$ }

**U C08K 5/49**

- Phosphorus-containing compounds {([C08K 5/0091](#) takes precedence)}

**U C08K 5/51**

- • Phosphorus bound to oxygen

**U C08K 5/53**

- • • bound to oxygen and to carbon only

C08K 5/5313

- • • • Phosphinic compounds, e.g.  $R_2=P(:O)OR^1$

C08K 5/5317

- • • • Phosphonic compounds, e.g.  $R-P(:O)(OR^1)_2$

C08K 5/5377

- • • • Phosphinous compounds, e.g.  $R_2=P-OR^1$

C08K 5/5393

- • • • Phosphonous compounds, e.g.  $R-P(OR^1)_2$

**Project: N/A (C09B)****U C09B 45/00**

**Complex metal compounds of azo dyes**

C09B 45/02

- Preparation from dyes containing in o-position a hydroxyl group and in o'-position hydroxyl, alkoxy, carboxyl, amino or keto groups

C09B 45/34

- Preparation from o-monohydroxy azo compounds having in the o'-position an atom or functional group other than hydroxyl, alkoxy, carboxyl, amino or keto groups

C09B 45/36

- • by oxidation of hydrogen in o'-position

**Project: MP0123 (C09B)****M C09B 68/00**

**{Organic pigments surface-modified by grafting, e.g. by establishing covalent or complex bonds, in order to improve the pigment properties, e.g. dispersibility or rheology}**

**WARNING**

Groups C09B 68/00 to C09B 68/485 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - C09B 68/40 : C09B 67/00 or subgroups - C09B 68/41 : C09B 67/00 or subgroups - C09B 68/42 : C09B 67/00 or subgroups

## Project: N/A (C09C)

## C09C

TREATMENT OF INORGANIC MATERIALS, OTHER THAN FIBROUS FILLERS, TO ENHANCE THEIR PIGMENTING OR FILLING PROPERTIES (preparation of inorganic compounds or non-metallic elements [C01](#); treatment of materials specially adapted to enhance their filling properties in mortars, concrete or artificial stone [C04B 14/00](#), [C04B 18/00](#), [C04B 20/00](#)); PREPARATION OF CARBON BLACK; ~~{Preparation of inorganic materials which are no single chemical compounds and which are mainly used as pigments or fillers}~~ **PREPARATION OF INORGANIC MATERIALS WHICH ARE NO SINGLE CHEMICAL COMPOUNDS AND WHICH ARE MAINLY USED AS PIGMENTS OR FILLERS}**

NOTES

1. In this subclass, in the absence of an indication to the contrary, a compound is classified in the last appropriate place
2. Treatment by polymerisation onto particle is classified in [C08F 292/00](#). Only treatment by already polymerised agents is classified in [C09C](#)
3. Whenever in groups [C09C 1/00](#) to [C09C 1/66](#) the materials consist of a particulate core bearing a coating or any other deposit, classification is done only according to the composition of the core, unless otherwise stated, e.g. [C09C 1/0015](#), [C09C 1/0078](#)
4. Preparations of those materials which are no single chemical compounds comprise those of many ceramic pigments ([C09C 1/0009](#)), consisting of solid solutions or polycrystalline structures, and those defined as composite materials ([C09C 1/0081](#))
5. Preparation and treatment steps are not always easy to distinguish from each other, e.g. preparation in the presence of treating agents (by precipitation or calcination), precise reacting conditions, affecting pigmentary effects. It is common practice to include these complex topics in [C09C 1/00](#) while avoiding redundancy
6. When classifying in this subclass, the indexing codes of subclass [C01P](#) are used to identify structural or physical aspects of solid inorganic compounds

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:

[C09C 1/68](#) covered by [C09K 3/14](#)

## Project: N/A (C09D)

## C09D

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

## NOTES

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

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

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

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

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

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

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

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

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

Examples:

A coating composition containing 80 parts of polyethene and 20 parts of polyvinylchloride

is classified in group [C09D 123/06](#);

A coating composition containing 40 parts of polyethene and 40 parts of polyvinylchloride

is classified in groups [C09D 123/06](#) and [C09D 127/06](#).

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

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

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

6. Documents classified up until 09-2003: Classification is given in the form of C-Sets. The polymer in majority is given a [C09D 101/00](#) - [C09D 201/10](#) symbol, and the minor components are characterised by Indexing Codes taken from the list below. The Indexing Codes are linked. The polymer in majority is always first in the C-set. List of [C08L](#) codes: [C08L 23/00](#), [C08L 23/26](#), [C08L 25/00](#), [C08L 27/00](#), [C08L 27/04](#), [C08L 27/12](#), [C08L 29/00](#), [C08L 31/00](#), [C08L 33/00](#), [C08L 35/00](#), [C08L 37/00](#), [C08L 51/00](#), [C08L 53/00](#), [C08L 55/02](#), [C08L 61/04](#), [C08L 61/20](#), [C08L 63/00](#), [C08L 67/00](#), [C08L 67/02](#), [C08L 67/025](#), [C08L 67/03](#), [C08L 67/04](#), [C08L 67/06](#), [C08L 67/07](#), [C08L 69/00](#), [C08L 69/005](#), [C08L 71/00](#), [C08L 75/04](#), [C08L 77/00](#), [C08L 77/08](#), [C08L 77/12](#), [C08L 79/08](#), [C08L 79/085](#), [C08L 81/00](#), [C08L 83/00](#), [C08L 85/00](#), [C08L 91/06](#), [C08L 95/00](#) or [C08L 2666/00](#) - [C08L 2666/86](#). Documents from group [C09D 123/00](#) - [C09D 123/36](#), [C09D 145/00](#) - [C09D 145/02](#) and [C09D 149/00](#) have all been reclassified following Note 3 below. An additive is classified in the last appropriate place in the list as selected for each [C09D](#) group.

Examples:

- a. A coating composition based on a polyamide and a graft polymer is classified in ([C09D 177/00](#), [C08L 2666/24](#)).
- b. A coating composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified according to note 4 of [C08K](#), i.e. in [C08K 3/26](#) and [C09D 127/06](#). If this coating composition contains also a polyamide, then the classification will be ([C09D 127/06](#), [C08L 77/00](#), [C08K 3/26](#)).
- c. A coating composition based on a polysiloxane ([C09D 183/04](#)) and containing a second polysiloxane, a phenol and silica is classified in ([C09D 183/04](#), [C08L 83/04](#), [C08L 2666/34](#), [C08L 2666/54](#)).

7. From 01.09.2003 until April 2012: Classification is given in the form of C-Sets. The polymer in majority is given a [C09D](#) symbol, and the minor components are characterised by Indexing Codes taken from [C08L](#) or [C08K](#) and they are linked or unlinked. The polymer in majority is always first in the C-set. List of indexing codes in the C-Sets: [C08L 1/00](#), [C08L 81/00](#), [C08L 83/00](#), [C08L 91/06](#), [C08L 95/00](#) or [C08L 2666/02](#) - [C08L 2666/08](#), [C08L 2666/14](#) - [C08L 2666/26](#).

Examples:

- a. A coating of 60 parts polyvinylchloride ([C09D 127/06](#)) and 40 parts polyamide is classified in ([C09D 127/06](#), [C08L 2666/20](#)), [C08L 77/00](#).
- b. A coating of 50 parts polyvinylchloride ([C09D 127/06](#)) and 50 parts polyamide ([C09D 177/00](#)) is classified in ([C09D 127/06](#), [C08L 2666/20](#)), and [C08L 77/00](#), as well as ([C09D 177/00](#), [C08L 2666/04](#)) and [C08L 27/06](#)

- c. A coating composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified according to [N: Note 4 of [C08K](#), i.e. in [C08K 3/26](#), [C09D 127/06](#). If this composition contains also a polyamide, then the classification will be ([C09D 127/06](#), [C08L 2666/20](#)) and [C08K 3/26](#).
- d. A composition based on a first polysiloxane ([C09D 183/04](#)) and containing a second polysiloxane, a phenol and silica is classified in ([C09D 183/04](#), [C08L 83/00](#), [C08K 5/13](#), [C08K 3/36](#)) and [C08L 2205/02](#).
8. From April 2012 onwards, after the notation of groups [C09D 101/00](#) to [C09D 201/00](#), notations concerning the other constituents of the coating composition may be added, in the form of C-Sets. The further constituent is added with an indexing code. The indexing codes are chosen from [C08L 1/00](#) - [C08L 2555/86](#) or [C08K](#) and they may be linked or unlinked: - [C08L 1/00](#) - [C08L 101/10](#) are linked. - [C08L 2201/00](#) - [C08L 2555/86](#) are unlinked. The polymer in majority is always first in the C-set. Examples:
- a. A coating composition containing polyethylene and amino-propyltrimethoxysilane is classified in groups [C09D 123/06](#) and [C08K 5/544](#) (unlinked).
- b. A coating composition containing 80 parts of polyethene and 20 parts of polyvinylchloride is classified in ([C09D 123/06](#), [C08L 27/06](#)).
- c. A coating composition containing 40 parts of polyethene and 40 parts of polyvinylchloride is classified in ([C09D 123/06](#), [C08L 27/06](#)) and ([C09D 127/06](#), [C08L 23/06](#)).
- d. A coating composition containing 90% of polysiloxane ([C09D 183/04](#)) further containing 10% of polyester ([C08L 67/00](#)) and an alcohol is classified in ([C09D 183/04](#), [C08L 67/00](#), [C08K 5/05](#)).

#### WARNING

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

<a href="#">C09D 4/02</a>	covered by	<a href="#">C09D 4/00</a> ,
<a href="#">C08F 220/00</a>		
<a href="#">C09D 4/04</a>	covered by	<a href="#">C09D 4/00</a> ,
<a href="#">C08F 222/00</a>		
<del>C09D 5/23</del> <a href="#">C09D 5/23</a>	covered by	
<a href="#">H01F 41/16</a>		
<a href="#">C09D 5/25</a>	covered by	<a href="#">H01B 3/308</a>
<a href="#">C09D 5/33</a>	covered by	<a href="#">C09D 5/004</a>
<a href="#">C09D 5/46</a>	covered by	<a href="#">C09D 5/03</a>
<a href="#">C09D 161/08</a> ,	<a href="#">C09D 161/10</a>	covered by
<a href="#">C09D 161/06</a>		
<a href="#">C09D 163/02</a>	covered by	<a href="#">C09D 163/00</a>
<del>C09D 171/08</del> <a href="#">C09D 171/08</a>	covered by	
<a href="#">C09D 171/02</a>		
<del>C09D 171/10</del> <a href="#">C09D 171/10</a>	covered by	
<a href="#">C09D 171/12</a>		
<a href="#">C09D 183/05</a>	covered by	<a href="#">C09D 183/04</a>
<a href="#">C09D 183/07</a>	covered by	<a href="#">C09D 183/04</a> ,
<a href="#">C09D 183/06</a>		

#### U C09D 5/00

Coating compositions, e.g. paints, varnishes or lacquers, characterised by their physical nature or the effects produced; Filling pastes {(magnetisable or magnetic paints [H01F 1/00](#); electrically insulating paints [H01B 3/00](#); paints for electrophoretic applications [C25D 13/00](#))}

C09D 5/06

• Artists' paints

C09D 17/00

Pigment pastes, e.g. for mixing in paints (~~artists' paints~~ [C09D 5/06](#) ~~artists' paints~~ [C09D 5/06](#))

## Project: N/A (C09J)

## C09J

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

NOTES

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

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

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

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

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

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

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

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

Examples: An adhesive containing 80 parts of polyethene and 20 parts of polyvinylchloride is classified in group [C09J 123/06](#);

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



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

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

5. Documents classified up until 09-2003: Classification is given in the form of C-Sets. The polymer in majority is given a [C09J 101/00](#) - [C09J 201/10](#) symbol, and the minor components are characterised by Indexing Codes taken from the list below. The Indexing Codes are linked. The polymer in majority is always first in the C-set.

List of [C08L](#) codes: [C08L 23/00](#), [C08L 23/26](#), [C08L 25/00](#), [C08L 27/00](#), [C08L 27/04](#), [C08L 27/12](#), [C08L 29/00](#), [C08L 31/00](#), [C08L 33/00](#), [C08L 35/00](#), [C08L 37/00](#), [C08L 51/00](#), [C08L 53/00](#), [C08L 55/02](#), [C08L 61/04](#), [C08L 61/20](#), [C08L 63/00](#), [C08L 67/00](#), [C08L 67/02](#), [C08L 67/025](#), [C08L 67/03](#), [C08L 67/04](#), [C08L 67/06](#), [C08L 67/07](#), [C08L 69/00](#), [C08L 69/005](#), [C08L 71/00](#), [C08L 75/04](#), [C08L 77/00](#), [C08L 77/08](#), [C08L 77/12](#), [C08L 79/08](#), [C08L 79/085](#), [C08L 81/00](#), [C08L 83/00](#), [C08L 85/00](#), [C08L 91/06](#), [C08L 95/00](#) or [C08L 2666/00](#) - [C08L 2666/86](#). An additive is classified in the last appropriate place in the list as selected for each [C09J](#) group. Examples:

- a. An adhesive composition based on a polyamide and a graft polymer is classified in ([C09J 177/00](#), [C08L 2666/24](#)).
- b. An adhesive composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified according to note 4 of [C08K](#), i.e. in [C08K 3/26](#) and [C09J 127/06](#). If this adhesive composition contains also a polyamide, then the classification will be ([C09J 127/06](#), [C08L 77/00](#), [C08K 3/26](#)).
- c. An adhesive composition based on a polysiloxane ([C09J 183/04](#)) and containing a second polysiloxane, a phenol and silica is classified in ([C09J 183/04](#), [C08L 83/04](#), [C08L 2666/34](#), [C08L 2666/54](#)

6. From April 2012, after the notation [C09J 4/00](#), classification concerning the monomer may be added, in the form of C-sets. The notation is selected from [C08F 210/00](#) to [C08F 246/00](#), [C08G 77/00](#) to [C08G 77/04](#) or [C08G 77/20](#) to [C08G 77/30](#).

Ex. 1: An adhesive based on methylmethacrylate monomer is classified in ([C09J 4/00](#), [C08F 220/00](#)).

Ex. 2: An adhesive based on a dialkoxysilane monomer compound is classified in ([C09J 4/00](#), [C08G 77/04](#)).

7. From 01.09.2003 until April 2012: Classification is given in the form of C-Sets. The polymer in majority is given a [C08L](#) class, and the minor components are characterised by Indexing Codes taken from [C08L](#) or [C08K](#) and they are linked or unlinked. The polymer in majority is always first in the C-set. List of indexing codes in the C-Sets: [C08L 1/00](#), [C08L 81/00](#), [C08L 83/00](#), [C08L 91/06](#), [C08L 95/00](#) or [C08L 2666/02](#) - [C08L 2666/08](#), [C08L 2666/14](#) - [C08L 2666/26](#).

Examples:

- a. An adhesive blend of 60 parts polyvinylchloride ([C09J 127/06](#)) and 40 parts polyamide is classified in ([C09J 127/06](#), [C08L 2666/20](#)), [C08L 77/00](#).
- b. An adhesive blend of 50 parts polyvinylchloride ([C09J 127/06](#)) and 50 parts polyamide ([C09J 177/00](#)) is classified in ([C09J 127/06](#), [C08L 2666/20](#)), ([C09J 177/00](#), [C08L 2666/04](#)), [C08L 77/00](#) and [C08L 27/06](#).
- c. An adhesive composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified according to [N: Note 4 of [C08K](#), i.e. in [C08K 3/26](#), [C09J 127/06](#). If this composition contains also a polyamide, then the classification will be ([C09J 127/06](#), [C08L 2666/20](#)) and [C08K 3/26](#).
- d. A composition based on a first polysiloxane ([C09J 183/04](#)) and containing a second polysiloxane, a phenol and silica is classified in ([C09J 183/04](#), [C08L 83/00](#), [C08K 5/13](#), [C08K 3/36](#)) and [C08L 2205/02](#).

8. From April 2012 onwards, after the notation of groups [C09J 101/00](#) to [C09J 201/00](#), notations concerning the other constituents of the adhesive composition may be added, in the form of C-sets. The further constituent is added with an indexing code. The indexing codes are chosen from [C08L 1/00](#)

-[C08L 2555/86](#) or [C08K](#) and they may be linked or unlinked: - [C08L 1/00](#) - [C08L 101/16](#) are linked. - [C08L 2201/00](#) - [C08L 2555/86](#) are unlinked. The polymer in majority is always first in the C-set.

Examples:

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

#### WARNING

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

### U C09J 7/00

#### Adhesives in the form of films or foils

##### NOTE

In this group, the indexing codes of subclass **M09J** are used

U C09J 7/02  
C09J 7/0207

- on carriers
- • {characterised by pressure-sensitive adhesive}

### U C09J 9/00

#### Adhesives characterised by their physical nature or the effects produced, e.g. glue sticks ([C09J 7/00](#) takes precedence)

C09J 9/005

- {Glue sticks}

### Project: N/A (C09K)

### U C09K 11/00

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

U C09K 11/08

- containing inorganic luminescent materials

##### NOTES

1. In groups [C09K 11/08](#) to [C09K 11/897](#), in the absence of an indication to the contrary, classification of materials is made in the last appropriate place
2. { In this group, magnesium is considered as an alkaline earth metal }

##### WARNING

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

U C09K 11/58  
U C09K 11/582  
C09K 11/586  
U C09K 11/70  
C09K 11/705

- • containing copper, silver or gold
- • • {Chalcogenides}
- • • • {with alkaline earth metals}
- • containing phosphorus
- • • {Halogenides ([C09K 11/701](#), [C09K 11/706](#) and [C09K 11/708](#) take precedence)}

**Project: MP0124 (C09K)**

- U C09K 2205/00** Aspects relating to compounds used in compression type refrigeration systems
- U C09K 2205/40 · Replacement mixtures
- M C09K 2205/44 · Type **R14B1R13B1**

**Project: MP0123 (C10G)**

- M C10G** **CRACKING HYDROCARBON OILS; PRODUCTION OF LIQUID HYDROCARBON MIXTURES, e.g. BY DESTRUCTIVE HYDROGENATION, OLIGOMERISATION, POLYMERISATION (cracking to hydrogen or synthesis gas [C01B](#); cracking or pyrolysis of hydrocarbon gases to individual hydrocarbons or mixtures thereof of definite or specific constitution [C07C](#); cracking to cokes [C10B](#)); RECOVERY OF HYDROCARBON OILS FROM OIL-SHALE, OIL-SAND, OR GASES; REFINING MIXTURES MAINLY CONSISTING OF HYDROCARBONS; REFORMING OF NAPHTHA; MINERAL WAXES (inhibiting corrosion or incrustation in general [C23F](#))**

NOTES

- In this subclass,
  - groups [C10G 9/00](#) to [C10G 49/00](#) are limited to one-step processes;
  - combined or multi-step processes are covered by groups [C10G 51/00](#) to [C10G 69/00](#);
  - refining or recovery of mineral waxes is covered by group [C10G 73/00](#)
- In this subclass, the following terms or expressions are used with the meanings indicated:
  - "in the presence of hydrogen" or "in the absence of hydrogen" mean treatments in which hydrogen, in free form or as hydrogen generating compounds, is added, or not added, respectively;
  - "hydrotreatment" is used for conversion processes as defined in group [C10G 45/00](#) or group [C10G 47/00](#);
  - "hydrocarbon oils" covers mixtures of hydrocarbons such as tar oils or mineral oils.
- In this subclass, in the absence of an indication to the contrary, classification is made in the last appropriate place.

WARNING

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

[C10G 73/23](#) covered by [C10G 73/06](#)

2-

~~Groups [C10G 2/30](#) to [C10G 2/50](#) do not correspond to former or current IPC groups. The concordance CPC-IPC is as follows:~~  
~~[C10G 2/30](#) [C10G 2/50](#)~~  
~~[C10G 2/00](#)~~

**M C10G 3/00**

**Production of liquid hydrocarbon mixtures from oxygen-containing or organic materials, e.g. fatty oils, fatty acids (production from non-melting solid oxygen-containing carbonaceous materials [C10G 1/00](#); preparation of individual hydrocarbons or mixtures thereof of definite or specified contribution [C07C](#))**

WARNING

- Groups [C10G 3/40](#) to [C10G 3/62](#) are ~~not complete~~ *incomplete* pending a *reorganization*. See also *reclassification of documents from group [C10G 3/00](#)*.

*Groups C10G 3/40-C10G 3/62 and C10G 3/00 should be considered in order to perform a complete search.*

~~2. Groups C10G 3/40 to C10G 3/62 do not correspond to former or current IPC groups.~~

~~Concordance CPC : IPC for these groups is as follows: - C10G 3/40 - C10G 3/62 : C10G 3/00~~

## Project: N/A (C10H)

C10H 7/00

Acetylene gas generators with water feed by ~~Kipp's~~**Kipp's** principle

C10H 9/00

Acetylene gas generators according to ~~Dobereiner's~~**Dobereiner's** principle with fixed carbide bell

## Project: N/A (C10L)

U C10L 1/00

**Liquid carbonaceous fuels**

U C10L 1/10

• containing additives

C10L 1/106

• • {mixtures of inorganic compounds with organic macromolecular compounds}

### NOTES

1. In groups [C10L 1/12](#) to [C10L 1/30](#) {[C10L 1/308](#)}, in the absence of an indication to the contrary, a compound is always classified in the last appropriate place.

2. A metal salt or an ammonium salt of a compound is classified as that compound, e.g. a chromium sulfonate is classified as a sulfonate in group [C10L 1/24](#) and not in group [C10L 1/30](#).

3. When classifying in this group, it is desirable to classify the individual additional components using Combination Sets with symbols chosen from groups [C10L 1/12](#) to [C10L 1/308](#)

4. Mixtures of additives are classified in the corresponding main group. Individual additives can be classified using Combination Sets according to the Note above

5. When several alternatives for the same individual additive are mentioned, e.g. as a Markush-formula, classification may be done in the corresponding main group only, the alternatives being classified using Combination Sets, according to the Note above.

6. Documents classified until April 2003, have been classified with Combination Sets as explained in the Notes above, however using symbols chosen from groups [C10L 1/10](#) to [C10L 1/308](#).

## Project: N/A (C11B)

C11B

**PRODUCING (~~pressing~~**PRESSING**, ~~extraction~~**EXTRACTION**), REFINING AND PRESERVING FATS, FATTY SUBSTANCES (e.g. ~~lanolin~~**LANOLIN**), FATTY OILS AND WAXES, INCLUDING EXTRACTION FROM WASTE MATERIALS; ESSENTIAL OILS; PERFUMES (drying-oils [C09F](#))**

### NOTE

In this subclass, boron and silicon are considered as metals

U C11B 1/00

**Production of fats or fatty oils from raw materials**

U C11B 1/10

• by extracting

C11B 1/104

• • {using super critical gases or vapours}

**Project: MP0124 (C11C)**

- U C11C 3/00** Fats, oils, or fatty acids by chemical modification of fats, oils, or fatty acids obtained therefrom (sulfonated fats or oils [C07C 309/62](#); factice [C08H](#); drying oils [C09F](#))
- M C11C 3/14** • by isomerisation {(isomerisation induced by [hydrogeneration](#)[hydrogenation](#) [C11C 3/12](#))}

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

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

NOTE

Documents classified in groups [C11D 1/37](#), [C11D 1/645](#) to [C11D 1/655](#), [C11D 1/825](#) to [C11D 1/86](#), [C11D 1/94](#) to [C11D 1/945](#) and [C11D 10/00](#) to [C11D 10/047](#), are indexed using codes chosen from [C11D 1/00](#) to [C11D 1/92](#) to provide information on the individual ingredients on the compositions

WARNING

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

<a href="#">C11D 1/68</a>	covered by	<a href="#">C11D 3/2003</a>
<a href="#">C11D 1/70</a>	covered by	<a href="#">C11D 3/2003</a>
<a href="#">C11D 3/44</a>	covered by	<a href="#">C11D 3/43</a>
<a href="#">C11D 3/46</a>	covered by	<a href="#">C11D 3/2079</a> , <a href="#">C11D 9/48</a>
<a href="#">C11D 3/60</a>	covered by	<a href="#">C11D 3/00</a>
<a href="#">C11D 7/18</a>	covered by	<a href="#">C11D 3/39</a>
<a href="#">C11D 7/38</a>	covered by	<a href="#">C11D 3/39</a>
<a href="#">C11D 7/42</a>	covered by	<a href="#">C11D 3/386</a>
<a href="#">C11D 7/52</a>	covered by	<a href="#">C11D 7/50</a>
<a href="#">C11D 7/54</a>	covered by	<a href="#">C11D 3/395</a>
<a href="#">C11D 7/56</a>	covered by	<a href="#">C11D 3/395</a>
<a href="#">C11D 7/60</a>	covered by	<a href="#">C11D 7/00</a>
<del><a href="#">C11D 9/20</a></del> <a href="#">C11D 9/20</a>	covered by	partly covered by <a href="#">C11D 9/444</a>
<a href="#">C11D 9/50</a>	covered by	<a href="#">C11D 3/48</a>
<a href="#">C11D 9/60</a>	covered by	<a href="#">C11D 9/00</a>
<a href="#">C11D 10/02</a>	covered by	<a href="#">C11D 3/00</a>
<a href="#">C11D 10/06</a>	covered by	<a href="#">C11D 9/00</a>

**Project: MP0123 (C12M)****M C12M**

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

NOTES

1. In this subclass the term microorganism includes prokaryotic and eukaryotic cells. Viruses, human, animal or plant cells, protozoa, tissues and unicellular algae are considered microorganisms.
2. When classifying an apparatus according to its use in group [C12M 21/00](#), classification should also be given in at least one of the groups [C12M 23/00-C12M 99/00](#).
3. This subclass covers apparatus or devices for the fermentation or for growing microorganisms or animal tissues of both laboratory and industrial scale, i.e. bioreactors.
4. This subclass covers also apparatus or devices for the pre-treatment or after-treatment of the biomass or microorganisms to be cultured or that have been cultured.
5. This subclass does not cover the methods or processes taking place in the bioreactors that are not based on the use of the parts of the apparatus.
6. This subclass does not cover:
  - apparatus for culturing plant tissue, which are covered by [A01H 4/001](#);
  - apparatus for preservation of living parts of bodies of humans or animals, which are covered by [A01N 1/0242](#);
  - apparatus or devices for testing sterility conditions not linked to a bioreactor or fermenter growing biomass, which are covered by [A61L 2/00](#), [G01N 31/226](#);
  - apparatus for biological treatment of water, waste water, sewage or sludge, which are covered by [C02F 3/00](#), [C02F 11/00](#);
  - apparatus for brewing of beer, which are covered by [C12C](#);
  - apparatus for production of wine or vinegar, which are covered by [C12G](#), [C12J 1/10](#);
  - apparatus or devices for DNA and RNA technology, which are covered by [B01L 7/52](#), [B01J 19/0046](#), [C12N 15/1003](#);
  - fermentation processes, which are covered by [C12P](#);
  - apparatus for bioleaching of ores, which are covered by [C22B 3/18](#);
  - removing cellulose from cellulosic substances, which is covered by [D21C](#);
  - apparatus or devices for sampling, detection, investigation or analysis of microorganisms or biosensors, which are covered by [G01N 33/48](#);
  - apparatus for automatic analysis not linked to a bioreactor or fermenter growing biomass, which are covered by [G01N 35/00](#);
  - testing or evaluating the effect of a chemical or biological compound involving human or animal cells, which are covered by [G01N 33/5005](#);
  - apparatus for immunological test processes, which are covered by [G01N 33/5302](#).

WARNING

Groups C12M 21/00 to C12M 99/00 do not correspond to former or current IPC groups:

Concordance CPC : IPC for these groups is as follows:

- C12M 21/00 : C12M 1/00
- C12M 21/02 : C12M 1/00
- C12M 21/04 : C12M 1/107
- C12M 21/06 : C12M 3/00
- C12M 21/08 : C12M 3/00
- C12M 21/10 : C12M 3/10
- C12M 21/12 : C12M 1/00



- C12M 21/14 : C12M 1/00
- C12M 21/16 : C12M 1/16
- C12M 21/18 : C12M 1/40
- C12M 23/00 : C12M 1/00
- C12M 23/02 : C12M 1/00
- C12M 23/04 : C12M 1/12
- C12M 23/06 : C12M 1/12
- C12M 23/08 : C12M 1/24
- C12M 23/10 : C12M 1/22
- C12M 23/12 : C12M 1/32
- C12M 23/14 : C12M 1/00
- C12M 23/16 : C12M 3/06
- C12M 23/18 : C12M 1/00
- C12M 23/20 : C12M 1/00
- C12M 23/22 : C12M 1/00
- C12M 23/24 : C12M 1/04
- C12M 23/26 : C12M 1/00
- C12M 23/28 : C12M 1/00
- C12M 23/30 : C12M 1/00
- C12M 23/32 : C12M 1/00
- C12M 23/34 : C12M 1/00
- C12M 23/36 : C12M 1/107
- C12M 23/38 : C12M 1/00
- C12M 23/40 : C12M 1/00
- C12M 23/42 : C12M 3/00
- C12M 23/44 : C12M 3/00
- C12M 23/46 : C12M 3/00
- C12M 23/48 : C12M 3/00
- C12M 23/50 : C12M 1/00
- C12M 23/52 : C12M 1/00
- C12M 23/54 : C12M 3/00
- C12M 23/56 : C12M 1/09
- C12M 23/58 : C12M 1/00
- C12M 25/00 : C12M 1/12
- C12M 25/02 : C12M 1/12
- C12M 25/04 : C12M 1/12
- C12M 25/06 : C12M 1/12
- C12M 25/08 : C12M 1/12
- C12M 25/10 : C12M 1/12
- C12M 25/12 : C12M 1/12
- C12M 25/14 : C12M 1/12
- C12M 25/16 : C12M 1/12
- C12M 25/18 : C12M 1/12
- C12M 25/20 : C12M 1/12
- C12M 27/00 : C12M 1/02
- C12M 27/02 : C12M 1/06
- C12M 27/04 : C12M 1/04
- C12M 27/06 : C12M 1/06
- C12M 27/08 : C12M 1/06
- C12M 27/10 : C12M 3/04
- C12M 27/12 : C12M 3/04
- C12M 27/14 : C12M 3/06
- C12M 27/16 : C12M 3/06
- C12M 27/18 : C12M 1/00
- C12M 27/20 : C12M 1/00
- C12M 27/22 : C12M 1/00
- C12M 27/24 : C12M 1/08
- C12M 29/00 : C12M 1/00
- C12M 29/02 : C12M 1/00

- C12M 29/04 : C12M 1/00
- C12M 29/06 : C12M 1/00
- C12M 29/08 : C12M 1/00
- C12M 29/10 : C12M 1/00
- C12M 29/12 : C12M 1/00
- C12M 29/14 : C12M 1/00
- C12M 29/16 : C12M 1/00
- C12M 29/18 : C12M 1/00
- C12M 29/20 : C12M 1/00
- C12M 29/22 : C12M 1/00
- C12M 29/24 : C12M 1/00
- C12M 29/26 : C12M 1/00
- C12M 31/00 : C12M 1/00
- C12M 31/02 : C12M 1/00
- C12M 31/04 : C12M 1/00
- C12M 31/06 : C12M 1/00
- C12M 31/08 : C12M 1/00
- C12M 31/10 : C12M 1/00
- C12M 31/12 : C12M 1/00
- C12M 33/00 : C12M 1/26
- C12M 33/02 : C12M 1/30
- C12M 33/04 : C12M 1/26
- C12M 33/06 : C12M 1/32
- C12M 33/08 : C12M 1/26
- C12M 33/10 : C12M 1/26
- C12M 33/12 : C12M 1/26
- C12M 33/14 : C12M 1/26
- C12M 33/16 : C12M 1/26
- C12M 33/18 : C12M 1/26
- C12M 33/20 : C12M 1/26
- C12M 35/00 : C12M 1/42
- C12M 35/02 : C12M 1/42
- C12M 35/04 : C12M 1/42
- C12M 35/06 : C12M 1/42
- C12M 35/08 : C12M 1/42
- C12M 37/00 : C12M 1/12
- C12M 37/02 : C12M 1/12
- C12M 37/04 : C12M 1/12
- C12M 37/06 : C12M 1/12
- C12M 39/00 : C12M 1/00
- C12M 41/00 : C12M 1/34
- C12M 41/02 : C12M 1/21
- C12M 41/04 : C12M 1/34
- C12M 41/06 : C12M 1/00
- C12M 41/08 : C12M 1/00
- C12M 41/10 : C12M 1/00
- C12M 41/12 : C12M 1/34
- C12M 41/14 : C12M 1/00
- C12M 41/16 : C12M 1/34
- C12M 41/18 : C12M 1/02
- C12M 41/20 : C12M 1/02
- C12M 41/22 : C12M 1/02
- C12M 41/24 : C12M 1/02
- C12M 41/26 : C12M 1/34
- C12M 41/28 : C12M 1/34
- C12M 41/30 : C12M 1/34
- C12M 41/32 : C12M 1/34
- C12M 41/34 : C12M 1/34
- C12M 41/36 : C12M 1/34

- C12M 41/38 : C12M 1/34
- C12M 41/40 : C12M 1/34
- C12M 41/42 : C12M 1/34
- C12M 41/44 : C12M 1/34
- C12M 41/46 : C12M 1/34
- C12M 41/48 : C12M 1/36
- C12M 43/00 : C12M 1/00
- C12M 43/02 : C12M 1/00
- C12M 43/04 : C12M 1/00
- C12M 43/06 : C12M 1/00
- C12M 43/08 : C12M 1/00
- C12M 45/00 : C12M 1/00
- C12M 45/02 : C12M 1/33
- C12M 45/04 : C12M 1/00
- C12M 45/06 : C12M 1/00
- C12M 45/06 : C12M 3/08
- C12M 45/09 : C12M 3/08
- C12M 45/20 : C12M 3/08
- C12M 45/06 : C12M 3/08
- C12M 45/09 : C12M 3/08
- C12M 45/20 : C12M 1/00
- C12M 45/20 : C12M 1/00
- C12M 45/22 : C12M 1/00
- C12M 47/00 : C12M 1/00
- C12M 47/00 : C12M 1/00
- C12M 47/02 : C12M 1/00
- C12M 47/04 : C12M 1/00
- C12M 47/06 : C12M 1/00
- C12M 47/08 : C12M 1/00
- C12M 47/10 : C12M 1/00
- C12M 47/12 : C12M 1/00
- C12M 47/14 : C12M 1/00
- C12M 47/16 : C12M 1/00
- C12M 47/18 : C12M 1/00
- C12M 47/20 : C12M 1/00

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

U C12N 1/00

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

U C12N 1/14

• Fungi (culture of mushrooms [A01G 1/04](#); as new plants per se [A01H 15/00](#); {fungi per se [C12R 1/645](#) to [C12R 1/885](#)}) Culture media therefor

U C12N 1/16

• • Yeasts; Culture media therefor

C12N 1/18

• • • Baker's ~~Baker's~~ yeast; Brewer's ~~Brewer's~~ yeast

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

U C12Q 2326/00

Chromogens for determinations of oxidoreductase enzymes

U C12Q 2326/10

• Benzidines

C12Q 2326/12

• • 3,3',5,5'-Tetramethylbenzidine, i.e. TMB

C12Q 2326/14

• • Ortho-Tolidine, i.e. 3,3'-dimethyl-(1,1'-biphenyl-4,4'-diamine)

C12Q 2326/30

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

- U C12Q 2527/00** Reactions demanding special reaction conditions (not used)
- U C12Q 2527/10** • Reaction conditions characterised by (metal/ion [C12Q 2563/137](#))(not used)
- C12Q 2527/127** • • the enzyme inhibitor or activator used ~~N0611~~

**Project: N/A (C12R)****C12R****PROCESSES USING MICRO-ORGANISMS**NOTE

The basis for the bacteria terminology is "~~Bergey's~~ [Bergey's](#) Manual of Determinative Bacteriology", Eighth Edition, 19/75.

**Project: MP0124 (C13K)**

- M C13K 13/00** {Sugars not otherwise provided for in ~~class~~ [this C12class](#)}

**Project: N/A (C14B)**

- U C14B 17/00** Details of apparatus or machines for manufacturing or treating skins, hides, leather, or furs
- C14B 17/16** • {Inspecting hides or furs}

**Project: N/A (C22C)**

- U C22C 32/00** Non-ferrous alloys containing at least 5% by weight but less than 50% by weight of oxides, carbides, borides, nitrides, silicides or other metal compounds, e.g. oxynitrides, sulfides whether added as such or formed in situ
- NOTE
- This group comprises also dispersion hardened alloys with less than 5% of dispersed compounds
- C22C 32/0089** • {with other, not previously mentioned inorganic compounds as the main non-metallic constituent, e.g. sulfides, glass}

**Project: MP0123 (C23C)**

- M C23C** COATING METALLIC MATERIAL; COATING MATERIAL WITH METALLIC MATERIAL; SURFACE TREATMENT OF METALLIC MATERIAL BY DIFFUSION INTO THE SURFACE, BY CHEMICAL CONVERSION OR SUBSTITUTION; COATING BY VACUUM EVAPORATION, BY SPUTTERING, BY ION IMPLANTATION OR BY CHEMICAL VAPOUR DEPOSITION, IN GENERAL (applying liquids or other fluent materials to surfaces in general [B05](#); making metal-coated products by extrusion [B21C 23/22](#); covering with metal by connecting pre-existing layers to articles, see the relevant places, e.g. [B21D 39/00](#), [B23K](#); working of metal by the action of a high concentration of electric current on a workpiece using an electrode [B23H](#); metallising of glass [C03C](#); metallising mortars, concrete, artificial stone, ceramics or natural stone [C04B 41/00](#); paints varnishes, laquers [C09D](#); enamelling of, or applying a vitreous layer to, metals [C23D](#); inhibiting corrosion of metallic material or incrustation in general [C23F](#); single-crystal film growth [C30B](#); manufacture of semiconductor devices [H01L](#); manufacture of printed circuits [H05K](#))

NOTE

In this subclass, an operation is considered as pre-treatment or after-treatment when it is specially adapted for, but quite distinct from, the coating process concerned and constitutes an independent operation. If an operation results in

the formation of a permanent sub- or upper layer, it is not considered as pre-treatment or after-treatment and is classified as a multi-coating process.

#### WARNING

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

~~2. 1. The following IPC groups are not used in the CPC **system scheme**. Subject matter covered by these groups is classified in the following CPC groups:-~~

~~C23C 14/36 to C23C 14/44 covered by~~

~~C23C 14/34 + subgr.~~

~~The following IPC group is not used in the CPC system.~~

~~Subject matter covered by the group is classified in the~~

~~following CPC groups : C23C 18/28 covered by~~

~~C23C 18/2006 - C23C 18/2093~~

• C23C 14/36 - C23C 14/44 covered by C23C 14/34 and subgroups.

• C23C 18/28 covered by C23C 18/2006 - C23C 18/2093

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

##### U C23C 28/00

**Coating for obtaining at least two superposed coatings either by methods not provided for in a single one of groups [C23C 2/00](#) to [C23C 26/00](#) or by combinations of methods provided for in subclasses [C23C](#) and [C25C](#) or [C25D](#)**

##### U C23C 28/02

• only coatings {only including layers} of metallic material

##### C23C 28/021

• • {including at least one metal alloy layer}

##### C23C 28/022

• • • {with at least one MCrAlX layer}

##### U C23C 28/023

• • {only coatings of metal elements only}

##### C23C 28/025

• • • {with at least one zinc-based layer}

##### C23C 28/026

• • {including at least one amorphous metallic material layer}

##### C23C 28/027

• • {including at least one metal matrix material comprising a mixture of at least two metals or metal phases or metal matrix composites, e.g. metal matrix with embedded inorganic hard particles, CERMET, MMC.}

##### C23C 28/028

• • {Including graded layers in composition or in physical properties, e.g. density, porosity, grain size}

##### U C23C 28/04

• only coatings of inorganic non-metallic material

##### C23C 28/042

• • {including a refractory ceramic layer, e.g. refractory metal oxides, ZrO<sub>2</sub>, rare earth oxides}

##### C23C 28/044

• • {coatings specially adapted for cutting tools or wear applications.}

#### Project: N/A (C23D)

##### U C23D 5/00

**Coating with enamels or vitreous layers {(including applying fused refractory layers [C23C 4/10](#), [C23C 24/10](#))}**

##### C23D 5/10

• {with refractory materials}

#### WARNING

Group [C23D 5/10](#) is no longer used for classification. Documents are in the state of being reclassified to [C23C 4/10](#) and [C23C 24/10](#).

#### Project: N/A (C25B)

##### U C25B 11/00

**Electrodes; Manufacture thereof not otherwise provided for**

##### U C25B 11/02

• characterised by shape or form

- U C25B 11/03      • • perforated or foraminous  
 C25B 11/035      • • • {Porous electrodes}

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

**PROCESSES FOR THE ELECTROLYTIC OR ELECTROPHORETIC PRODUCTION OF COATINGS; ELECTROFORMING (decorating textiles by metallising [D06Q 1/04](#); manufacturing printed circuits by metal deposition [H05K 3/18](#)); APPARATUS THEREFOR**

WARNING

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

- [C25D 5/24](#) covered by [C25D 5/34](#)  
[C25D 5/26](#) covered by [C25D 5/36](#)  
[C25D 5/28](#) covered by [C25D 5/38](#)  
[C25D 5/30](#) covered by [C25D 5/42](#), [C25D 5/44](#)  
[C25D 5/32](#) covered by [C25D 5/46](#)  
~~[C25D 13/06](#)~~ [C25D 13/06](#) covered by [C09D 5/44](#)  
~~[C25D 13/08](#)~~ [C25D 13/08](#) covered by [C09D 5/4476](#)  
~~[C25D 13/10](#)~~ [C25D 13/10](#) covered by [C09D 5/448](#)  
[C25D 19/00](#) covered by [C25D 17/00](#)

**Project: MP0124 (C25D)**

- U C25D 1/00      Electroforming**  
 M C25D 1/006      • {Nanostructures, e.g. ~~aluminum~~ [using aluminium](#) anodic oxidation templates [AAO]}
- U C25D 7/00      Electroplating characterised by the article coated**  
 M C25D 7/12      • Semiconductors ~~{without seed layer}~~  
 M C25D 7/123      • • {~~Semiconductors~~ [coated](#) first ~~coated~~ with a seed layer, [e.g.](#) for filling vias}

WARNING

Groups [C25D 7/123](#)-[C25D 7/126](#) are not complete, pending reorganization, see also [C25D 7/12](#)

- U C25D 11/00      Electrolytic coating by surface reaction, i.e. forming conversion layers**  
 U C25D 11/02      • Anodisation  
 M C25D 11/026      • • {Anodisation with spark discharge ~~[ANOF]~~}
- M C25D 15/00      Electrolytic or electrophoretic production of coatings containing ~~{uncharged}~~ embedded materials, e.g. particles, whiskers, wires**



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

**SINGLE-CRYSTAL-GROWTH** (by using ultra-high pressure, e.g. for the formation of diamonds [B01J 3/06](#)); **UNIDIRECTIONAL SOLIDIFICATION OF EUTECTIC MATERIAL OR UNIDIRECTIONAL DEMIXING OF EUTECTOID MATERIAL**; **REFINING BY ZONE-MELTING OF MATERIAL** (zone-refining of metals or alloys [C22B](#)); **PRODUCTION OF A HOMOGENEOUS POLYCRYSTALLINE MATERIAL WITH DEFINED STRUCTURE** (casting of metals, casting of other substances by the same processes or devices [B22D](#); working of plastics [B29](#); modifying the physical structure of metals or alloys [C21D](#), [C22F](#)); **SINGLE CRYSTALS OR HOMOGENEOUS POLYCRYSTALLINE MATERIAL WITH DEFINED STRUCTURE**; **AFTER-TREATMENT OF SINGLE CRYSTALS OR A HOMOGENEOUS POLYCRYSTALLINE MATERIAL WITH DEFINED STRUCTURE** (for producing semiconductor devices or parts thereof [H01L](#)); **APPARATUS THEREFOR**

NOTES

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

- "single-crystal" includes also twin crystals and a predominantly single crystal product;
- "homogeneous polycrystalline material" means a material with crystal particles, all of which have the same chemical composition;
- "defined structure" means the structure of a material with grains which are oriented in a preferential way or have larger dimensions than normally obtained.

2. In this subclass:

- the preparation of single crystals or a homogeneous polycrystalline material with defined structure of particular materials or shapes is classified in the group for the process as well as in group [C30B 29/00](#);
- an apparatus specially adapted for a specific process is classified in the appropriate group for the process. Apparatus to be used in more than one kind of process is classified in group [C30B 35/00](#).

3. After the notation of [C30B](#) and separated therefrom by a + sign, notations concerning the particular composition or shape of the material may be added. These notations are selected from [C30B 29/00](#).

Example: A crystal-growth process by zone-melting directly related to Al<sub>2</sub>O<sub>3</sub> crystal material is classified in [C30B 13/00](#) + [C30B 29/20](#)

WARNING

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

~~C30B 29/64~~~~C30B 29/64~~, ~~C30B 29/66~~~~C30B 29/66~~ covered by [C30B 29/60](#)

**U C30B 29/00**

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

NOTE

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

**U C30B 29/10**

- Inorganic compounds or compositions

**U C30B 29/40**

- • AIIIBV compounds {wherein A is B, Al, Ga, In or Tl and B is N, P, As, Sb or Bi}

**C30B 29/403**

- • • AIII{A<sub>III</sub>}-nitrides}

C30B 29/406

. . . {Gallium nitride}

**Project: N/A (D01D)****D01D****MECHANICAL METHODS OR APPARATUS IN THE MANUFACTURE OF ARTIFICIAL FILAMENTS, THREADS, FIBRES, BRISTLES OR RIBBONS****NOTES**

1. Attention is drawn to the note following the title of Class [D01](#).
2. Apparatus specially adapted for the manufacture of carbon filaments are classified in group [D01F 9/12](#)

**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:

~~D01D 5/10~~ [D01D 5/10](#) covered by [D01D 5/08](#) and subgroups

**Project: N/A (D03D)****U D03D 51/00**

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

D03D 51/002

• {Avoiding starting marks}

**WARNING**

Not complete, see [D03D 51/00](#)

**Project: N/A (D03J)****D03J****AUXILIARY WEAVING APPARATUS; WEAVERS' TOOLS; SHUTTLES****D03J 3/00****Weavers' tools, e.g. knot-tying tools****Project: N/A (D04H)****D04H**

**MAKING TEXTILE FABRICS, e.g. FROM FIBRES OR FILAMENTARY MATERIAL (weaving [D03](#); knitting [D04B](#); braiding {or lace-making} [D04C](#); net-making {or making knotted carpets} [D04G](#); sewing [D05B](#); tufting [D05C](#), {e.g. [D05C 15/04](#)}; finishing non-woven fabrics [D06](#)); FABRICS MADE BY SUCH PROCESSES OR APPARATUS, e.g. FELTS, NON-WOVEN FABRICS; COTTON-WOOL; WADDING {~~NonNON-woven fabrics from staple fibres~~ **WOVEN FABRICS FROM STAPLE FIBRES**, ~~filaments or yarns~~ **FILAMENTS OR YARNS**, ~~bonded with at least one web~~ **BONDED WITH AT LEAST ONE WEB-like material during their consolidation** **LIKE MATERIAL DURING THEIR CONSOLIDATION**}(non-woven fabrics having an intermediate or external layer of a different kind, e.g. of woven fabric, [B32B](#); {manufacturing hats [A42C](#); filtering material [B01D 39/00](#); making board or the like from wood fibre [B27N](#); producing shaped articles from mixtures containing fibres [B28B 1/52](#); making layered products from solid layers, at least one of which contains synthetic resin as an essential component [B32B 27/00](#); making or treating glass wool and mineral wool [C03B 37/00](#); compounding ingredients used as fillers for mortars and the like [C04B 14/38](#), [C04B 16/06](#), [C04B 20/0048](#); sintering plastics particles [C08J 9/24](#); manufacturing by extrusion of synthetic filaments and fibres in general [D01D](#); paper [D21C](#) to [D21H](#); making shaped articles from liquid suspensions of cellulose fibres [D21J](#))}**

**NOTES**

1. In this subclass, the following expression is used with the meaning indicated:
  - "non-woven fabrics" means fabrics formed wholly or partly of textile material by processes comprising operations other than the weaving,

knitting, braiding, lacing, or knotting of yarns, threads, or filaments for which provision is made in other subclasses of Section D. This expression includes felts, cotton-wool, and wadding.

2. In this subclass:

- some of the non-woven fabrics can also be regarded as "layered products" within the meaning of subclass [B32B](#), and further classification in that subclass should be considered in accordance with the notes thereto;
- in cases where the making of non-woven fabrics involves the use of particular chemical compounds or compositions, e.g. for treating or bonding fibres, filaments, or yarns, further classification in other appropriate subclasses should also be considered.

3. By varying the proportions of fibres or threads, and the chemical compounds or compositions, the final products may be given the appearance of paper, cardboard, leather or the like.

4. In this subclass, a number of groups, e.g. [D04H 1/067](#), correspond to IPC2012.01

#### WARNING

Documents of the complete subclass [D04H](#) including all subgroups are in the process of being reorganised to the new groups corresponding to the IPC 2012.01 classification scheme defined below.

### Project: N/A (D06F)

D06F

**LAUNDERING, DRYING, IRONING, PRESSING OR FOLDING TEXTILE ARTICLES** (apparatus for blocking, pressing, steaming, or stretching hats [A42C](#); treating textile materials by liquids, gases or vapours [D06B](#); chemical matters, see [D06L](#), [D06M](#))

#### NOTES

1. This subclass covers:

- domestic or laundry dry-cleaning apparatus using volatile solvents;
- domestic, laundry, or tailors' ironing or other hot- pressing of clothes, linen, or other textile articles.

2. This subclass does not cover:

- apparatus for wringing, washing, dry-cleaning, ironing, or other hot- pressing of textiles in manufacturing operations, which is covered by subclass [D06B](#), [D06C](#).

### Project: RP0065 (D06H)

U D06H 7/00

**Apparatus or processes for cutting, or otherwise severing, specially adapted for the cutting, or otherwise severing, of textile materials** (severing for making buttonholes [A41H](#); hand cutting tools in general [B26B](#); cutting machines in general [B26D](#); severing otherwise than by cutting in general [B26F](#); {web delivery apparatus incorporating cutting devices [B65H 35/0006](#)}; trimming seamed edges, shearing surfaces of fabrics, shearing lace or embroidery, e.g. cutting loose threads [D06C](#))

D06H 7/22

- Severing by heat or by chemical agents {(by laser beam [B23K 26/4055](#) [B23K 26/402](#))}

**Project: N/A (D06M)****U D06M 2101/00****Chemical constitution of the fibres, threads, yarns, fabrics or fibrous goods made from such materials, to be treated**NOTES

1. This subclass constitutes an internal scheme for indexing only.
  2. The indexing codes relate to the fibres to be treated and are to be used with the groups [D06M 11/00](#), [D06M 13/00](#), [D06M 15/00](#), [D06M 16/00](#) and [D06M 23/00](#)
- Examples:

- the swelling of cellulose with alkaline hydroxides is classified and indexed in [D06M 11/38](#) // [D06M 2101/06](#)
- the treatment of cellulose with amines is classified and indexed in [D06M 13/325](#) // [D06M 2101/06](#)
- the treatment of polyester fibres with polyester is classified and indexed in [D06M 15/507](#) // [D06M 2101/32](#)
- the treatment of wool with pepsin is classified and indexed in [D06M 16/00](#) // [D06M 2101/12](#)
- the treatment of cellulose with silicon tetrachloride in the form of a foam is classified and indexed in [D06M 11/78](#), [D06M 23/04](#) // [D06M 2101/06](#).

D06M 2101/005

- {Asbestos fibres}

NOTE

Blends of fibres are indexed according to each constituent fibre

**Project: N/A (D06N)****U D06N 2213/00****Others characteristics**

U D06N 2213/04

- Perforated layer

D06N 2213/045

- the coating layer does not completely close the openings between the fibres

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

**PULP COMPOSITIONS; PREPARATION THEREOF NOT COVERED BY SUBCLASSES [D21C](#) or [D21D](#); IMPREGNATING OR COATING OF PAPER; TREATMENT OF FINISHED PAPER NOT COVERED BY CLASS [B31](#) OR SUBCLASS [D21G](#); PAPER NOT OTHERWISE PROVIDED FOR**

NOTES

1. This subclass covers also pulp compositions for the preparation of fireboard or other fibrous articles by wet processes.
2. In this subclass, the following terms are used with the meaning indicated:
  - "pulp" means a dispersion, { e.g. an aqueous sus-pension, } comprising paper-making fibres and optional additives, which is to be processed, and covers the term "stock"; it also means dry paper-making fibres which are to be made into paper by either wet or dry processes;
  - "paper" means paper, cardboard or wet-laid non-woven fabrics.
3. In groups [D21H 11/00](#) to [D21H 15/00](#), in the absence of an indication to the contrary, classification is made in the last appropriate place.
4. Attention is drawn to the use of Combination Sets as specified in the Notes after groups [D21H 17/00](#), [D21H 17/69](#), [D21H 17/71](#), [D21H 19/00](#), [D21H 21/00](#), [D21H 21/14](#), [D21H 23/00](#), [D21H 23/22](#), [D21H 25/00](#) and [D21H 27/00](#).

**U D21H 17/00**

**Non-fibrous material added to the pulp, characterised by its constitution;  
Paper-impregnating material characterised by its constitution**

NOTES

1. In this group, in the absence of an indication to the contrary, a material is classified in the last appropriate place.
2. In this group, it is desirable to classify the individual constituents of fibres used in the pulp or paper using Combination Sets with symbols chosen from groups [D21H 11/00](#) to [D21H 15/00](#).

**U D21H 17/71**

- Mixtures of material ([D21H 17/69](#) takes precedence){Pulp or paper comprising several different materials not incorporated by special processes ([D21H 23/10](#), [D21H 23/70](#), [D21H 23/76](#) take precedence)}

NOTE

In this group, it is desirable to classify the individual components of the mixtures using Combination Sets with symbols chosen from groups [D21H 17/00](#) or [D21H 21/00](#).

D21H 17/72

- • {of organic material}

D21H 17/73

- • {of inorganic material}

D21H 17/74

- • {of organic and inorganic material}

**Project: N/A (E01B)****E01B 15/00**

**Guards for preventing a ~~person`s~~ *person's* foot being trapped in grooved rails**

**Project: N/A (E01D)****U E01D 2101/00**

**Material constitution of bridges**

U E01D 2101/20

- Concrete, stone or stone-like material

U E01D 2101/24

- • Concrete

U E01D 2101/26

- • • reinforced

E01D 2101/262

- • • • {with steel fibres}

E01D 2101/264

- • • • {with glass fibres}

E01D 2101/266

- • • • {with fibres other than steel or glass}

E01D 2101/268

- • • • {Composite concrete-metal}

U E01D 2101/28

- • • • prestressed

E01D 2101/285

- • • • • {Composite prestressed concrete-metal}

**Project: N/A (E01F)****E01F**

**ADDITIONAL WORK, SUCH AS EQUIPPING ROADS OR THE  
CONSTRUCTION OF PLATFORMS, HELICOPTER LANDING STAGES,  
SIGNS, SNOW FENCES, OR THE LIKE**

WARNING

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

~~E01F 15/10~~ *E01F 15/10* covered by [E01F 15/02](#)

**Project: MP0124 (E01F)**

- U E01F 9/00** Arrangement of road signs or traffic signals (signals, signalling systems [G08](#); signs, attachment thereof to supports [G09F](#)); Arrangements for enforcing caution, e.g. speed bumps
- U E01F 9/011** • Upright bodies, e.g. marker posts or bollards; Supports for road signs, {e.g. posts, frames, gantries}{[E01F 9/045](#), [E01F 9/0533](#), [E01F 13/02](#) take precedence;} posts or poles in general [E04H 12/00](#); means for attaching signs to a supporting structure in general [G09F 7/18](#))
- M E01F 9/019** • • [Extensible](#)[extensible](#), collapsible or pivotable; {, e.g. telescopic,}{[E01F 9/017](#), [E01F 9/018](#) take precedence)}; {[Retractable](#)[retractable](#) or otherwise movable to an underground position ([E01F 9/093](#), [E01F 13/046](#), [E01F 13/085](#) take precedence; retractable traffic islands [E01F 1/005](#)[E01F 1/00](#))}
- U E01F 9/04** • Road surface markings; Kerbs or road edgings, specially adapted for informing road users, e.g. illuminated (for redirecting vehicles [E01F 15/00](#))
- U E01F 9/041** • • {Selection of materials for road surface marking, e.g. wheel-grip improving additives, reflecting particles (specially adapted for kerbs [E01F 9/053](#), for playing grounds [A63C 19/06](#); reflecting or signal paints [C09D 5/004](#)); Methods of forming, installing or applying markings in, on or to paving ([E01F 9/047](#), [E01F 9/053](#), [E01F 9/06](#) take precedence; devices therefor [E01C](#))}
- M E01F 9/042** • • • {Preformed markings, e.g. materials for sheets or signs, methods of bonding same to road surface ([traffic line tapes](#) [E01F 9/083](#)[traffic line tapes](#) [E01F 9/083](#))}

**Project: N/A (E01H)****E01H**

**STREET CLEANING; CLEANING OF PERMANENT WAYS; CLEANING BEACHES; DISPERSING {~~or preventing~~OR PREVENTING} FOG IN GENERAL {~~Cleaning street or railway furniture or tunnel walls~~CLEANING STREET OR RAILWAY FURNITURE OR TUNNEL WALLS}**(cleaning in general [B08B](#))

**Project: N/A (E02F)****E02F****DREDGING; SOIL-SHIFTING (winning peat [E21C 49/00](#))**NOTE

This subclass covers :

- primarily equipment for excavating or loosening earth or for moving loose earth;
- equipment for working similarly on other materials and similar equipment for loading or unloading 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:

<a href="#">E02F 3/32</a> <a href="#">E02F 3/32</a>	covered by	<a href="#">E02F 3/30</a> ,
<a href="#">E02F 3/425</a>		
<a href="#">E02F 3/39</a>	covered by	<a href="#">E02F 3/286</a> , <a href="#">E02F 3/306</a> , <a href="#">E02F 3/3402</a>
<a href="#">E02F 3/78</a> <a href="#">E02F 3/78</a>	" "	<a href="#">E02F 7/76</a> + s.gr.
<a href="#">E02F 3/85</a>	" "	<a href="#">E02F 3/841</a> , <a href="#">E02F 3/842</a> , <a href="#">E02F 3/844</a> ,
<a href="#">E02F 3/845</a> ,		<a href="#">E02F 3/847</a>
<a href="#">E02F 5/04</a> <a href="#">E02F 5/04</a>	" "	<a href="#">E21B</a>
<a href="#">E02F 5/06</a> <a href="#">E02F 5/06</a>	" "	<a href="#">E02F 3/08</a>
<a href="#">E02F 5/08</a> <a href="#">E02F 5/08</a>	" "	<a href="#">E02F 3/18</a>
<a href="#">E02F 5/16</a> <a href="#">E02F 5/16</a>	" "	<a href="#">E21B</a>



<del>E02F 5/18</del> E02F 5/18	"	"	<a href="#">E21B</a>
<del>E02F 5/20</del> E02F 5/20	"	"	<a href="#">E21B</a>

## Project: N/A (E03F)

- U E03F 1/00** **Methods, systems, or installations for draining-off sewage or storm water**
- E03F 1/001
- {into a body of water}
- U E03F 1/002**
- {with disposal into the ground, e.g. via dry wells}
- E03F 1/003
- • {via underground elongated vaulted elements}
- E03F 1/005
- • {via box-shaped elements}

## Project: N/A (E04F)

**E04F** **FINISHING WORK ON BUILDINGS, e.g. STAIRS, FLOORS (windows, doors [E06B](#))**

### 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:

<del>E04F 11/09</del> E04F 11/09	covered by	<a href="#">E04F 11/02</a>
<del>E04F 11/17</del> E04F 11/17	covered by	<a href="#">E04F 11/16</a>

## Project: N/A (E04G)

**E04G 1/00 -** **~~Workmen's~~Workmen's or safety scaffolds**

**E04G 7/00**

- U E04G 21/00** **Preparing, conveying, or working-up building materials or building elements in situ; Other devices or measures for constructional work (conveying in general [B65G](#); lifting devices [B66](#); working stone-like materials [B28D](#); measuring instruments [G01](#))**
- U E04G 21/14**
- Conveying or assembling building elements (roofing [E04D](#); finishing work [E04F](#))
- U E04G 21/16**
- • Tools or apparatus (devices for erecting fences [E04H 17/26](#))
- U E04G 21/18**
- • • Adjusting tools; Templates; {(workshop marking tools [B25H](#); for coverings or linings [E04F 21/18](#))}
- E04G 21/1808
- • • • {Holders for bricklayers' lines, bricklayers' bars; Sloping braces (cord-line chalkers [B44D 3/38](#))}
- E04G 21/1833
- • • • • {Line-holders for setting-out builders' work, e.g. foundations}

## Project: N/A (E04H)

- U E04H 1/00** **Buildings or groups of buildings for dwelling or office purposes; General lay-out, e.g. modular co-ordination, staggered storeys {small buildings} ([E04H 3/00](#) takes precedence; buildings for two or more purposes, e.g. drive-in buildings [E04H 14/00](#); building construction in general [E04B 1/00](#))**
- E04H 1/12
- Small buildings or other erections for limited occupation, erected in the open air or arranged in buildings, e.g. kiosks, waiting shelters for bus stops or for filling stations, roofs for railway platforms, watchmen's huts, dressing cubicles (movable screens as household equipment [A47G 5/00](#))

**Project: MP0123 (E05B)**

**M E05B LOCKS; ACCESSORIES THEREFOR; HANDCUFFS**

**NOTES**

1. Operating or controlling of locks for vehicle wings are classified in groups ~~E05B 77/00-E05B 81/00.~~
2. Knobs, handles or press buttons for locks of vehicle wings are classified in ~~E05B 79/00-E05B 85/00.~~

**Project: N/A (E05B)**

- U E05B 17/00 Accessories in connection with locks (buffers [E05F 5/00](#); means for preventing rattling of wings [E05F 7/04](#); means for taking the weight of the wing [E05F 7/06](#))**
- E05B 17/0004 • {Lock assembling or manufacturing (~~making locksmith's goods of sheet metal B21D 53/38~~; *making locksmith's goods of sheet metal B21D 53/38*; assembling in general [B23P 21/00](#))}
- U E05B 73/00 Devices for locking portable objects against unauthorised removal; Miscellaneous locking devices {(motorcycle helmets [A42B 3/0413](#), [B62J 11/005](#); gun racks [A47B 81/005](#); showcases with theft protection [A47F 3/002](#); anti-theft means for peg-boards, grids or rods for hanging merchandise [A47F 5/0861](#); show stands, hangers, shelves with provision against unauthorised removal [A47F 7/024](#); for self-service hand-carts [A47F 10/04](#); locking skis [A63C 11/004](#); locking bolts, nuts or pins [F16B 41/00](#))}**
- E05B 73/0082 • {for office machines, e.g. ~~PC's~~*PC's*, portable computers, typewriters, calculators}

**Project: N/A (E05C)**

- U E05C 7/00 Fastening devices specially adapted for two wings**
- NOTE**  
If a fastening device merely secures one wing to another wing which is already closed it is not regarded as specially adapted for two wings
- U E05C 7/04 • for wings which abut when closed {(pillarless vehicle doors [E05B 83/38](#))}
- E05C 7/045 • • {*Sliding bolts mounted on or in the edge of a normally closed wing of a double-door or -window*}

**Project: MP0124 (E05C)**

- U E05C 17/00 Devices for holding wings open; Devices for limiting opening of wings or for holding wings open by a movable member extending between frame and wing; Braking devices, stops or buffers, combined therewith (combined with hinges [E05D 11/00](#); combined with operating apparatus for wings [E05F](#); other braking devices, stops, buffers [E05F 5/00](#))**
- U E05C 17/02 • by mechanical means ([E05C 17/60](#) takes precedence)
- M E05C 17/04 • • {~~Hinges for the~~*with a* movable bar *or equivalent member extending between frame and wing*(~~E05C 17/163, E05C 17/26, E05C 17/345 take precedence; hinges in general F16C 11/04, E05D~~)}

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

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

WARNING

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

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

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

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

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

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

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

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

**U E05D 13/00**

**Accessories for sliding or lifting wings, e.g. pulleys, safety catches** ({closers or openers for horizontally sliding wings [E05F 1/02](#), [E05F 1/08](#)}; counterbalance devices {for swinging wings} [E05F 1/00](#), [E05F 3/00](#))

E05D 13/10

• {Counterbalance devices}

E05D 13/12

• • {with springs}

E05D 13/14

• • {with weights}

**Project: N/A (E05G)****U E05G 5/00**

**Bank protection devices** ([E05G 1/12](#), [E05G 7/00](#) take precedence; closed circuit television systems [H04N 7/18](#))

E05G 5/006

• {~~Cashier's~~ ~~Cashier's~~ counters or receptables for holding valuables readily accessible for handling, with safeguard mechanisms for the valuables in case of hold-up}

**Project: N/A (E06B)****U E06B 3/00**

**Window sashes, door leaves, or like elements for closing {wall or like} openings; Layout of fixed or moving closures, e.g. windows {in wall or like openings}; Features of rigidly-mounted outer frames relating to the mounting of wing frames** ([E06B 5/00](#) takes precedence; shutters or the like [E06B 9/00](#); glass panes [C03](#))

**U E06B 3/32**

• Arrangements of wings characterised by the manner of movement; Arrangements of movable wings in openings; Features of wings or frames relating solely to the manner of movement of the wing ({fittings or supporting means, separable from the frame, for guiding or controlling the movement of wings, arrangements of wings characterised by particular forms of such means [E05D](#)})

**U E06B 3/34**

• • with only one kind of movement ([E06B 3/48](#) takes precedence)

**U E06B 3/42**

• • • Sliding wings; Details of frames with respect to guiding ({[E06B 3/26347](#) and [E06B 3/92](#) take precedence})

**U E06B 3/44**

• • • • Vertically-sliding wings

E06B 3/4423

• • • • {disappearing in a wall pocket}; Pockets therefor}

**Project: N/A (E21B)****U E21B 43/00**

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

E21B 43/25

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

**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](#) ~~covered by~~ [E21B 3/02](#)

[E21B 3/035](#) " " [E21B 3/035](#) " "

~~E21B 3/035~~

[E21B 3/025](#) " " [E21B 3/025](#) " "

~~E21B 3/025~~

[E21B 3/03](#) " " [E21B 3/03](#) " " ~~E21B 3/03~~

[E21B 6/00](#) " " [E21B 6/00](#) " " ~~E21B 6/00~~

~~E21C3/08~~ [E21C 3/08](#) " " [B25D 9/06](#), [B25D 15/00](#)

~~B25D15/00~~

~~E21C3/10~~ [E21C 3/10](#) " " [B25D 15/02](#) [B25D15/02](#)

~~E21C3/12~~ [E21C 3/12](#) " " [B25D 11/00](#)

~~E21C3/14~~ [E21C 3/14](#) " " [B25D 11/00](#)

~~E21C3/20~~ [E21C 3/20](#) " " [B25D 9/12](#)

~~E21C3/22~~ [E21C 3/22](#) " " [B25D 9/125](#)

~~B25D 11/005~~ [B25D 11/005](#) " " [B25D 9/265](#)

~~E21C3/34~~ [E21C 3/34](#) " " [B25D 17/08](#)

[E21B 19/081](#) " " [E21B 19/081](#) " "

~~E21B 19/081~~

[E21B 19/083](#) " " [E21B 19/083](#) " "

~~E21B 19/083~~

[E21B 19/084](#) " " [E21B 19/084](#) " "

~~E21B 19/084~~

[E21B 19/089](#) " " [E21B 19/089](#) " "

~~E21B 19/089~~

[E21B 44/08](#) " " [E21B 44/08](#) " "

~~E21B 44/08~~

[E21B 44/00](#) " " [E21B 44/00](#) " "

~~E21B 44/00~~

[E21B 21/14](#) " " [E21B 21/14](#) " "

~~E21B 21/14~~

<del>E21B 7/02</del>	"	"	<del>E21B 7/02</del>	"	"	<del>E21B 7/02</del>
<del>E21C 37/24</del>	<del>E21C 37/24</del>	"	"	<del>B25D</del>		
<del>E21C 37/26</del>	<del>E21C 37/26</del>	"	"	<del>B25D</del>		
<del>E21C 41/18</del>	<del>E21C 41/18</del>	"	"	<del>E21C 41/16</del>		
<del>E21C 41/20</del>	<del>E21C 41/20</del>	"	"	<del>E21C 41/16</del>		
<del>E21C 41/22</del>	<del>E21C 41/22</del>	"	"	<del>E21C 41/16</del>		
<del>E21C 41/24</del>	<del>E21C 41/24</del>	"	"	<del>E21C 41/16</del>		
<del>E21C 41/28</del>	<del>E21C 41/28</del>	"	"	<del>E21C 41/26</del>		
<del>E21C 41/30</del>	<del>E21C 41/30</del>	"	"	<del>E21C 41/26</del>		
<del>E21C 45/02</del>	<del>E21C 45/02</del>	"	"	<del>E21C 25/60</del>	<del>E21C 45/00</del>	
<del>E21C 45/04</del>	<del>E21C 45/04</del>	"	"	<del>E21C 25/60</del>	<del>E21C 45/00</del>	
<del>E21C 45/06</del>	<del>E21C 45/06</del>	"	"	<del>E21C 25/60</del>	<del>E21C 45/00</del>	
<del>E21C 45/08</del>	<del>E21C 45/08</del>	"	"	<del>E21C 25/60</del>	<del>E21C 45/00</del>	
<del>E21C 50/00</del>	<del>E21C 50/00</del>	"	"	<del>E02F 3/88</del>		
<del>E21C 50/02</del>	<del>E21C 50/02</del>	"	"	<del>E02F 3/88</del>		

U E21C 41/00

Methods of underground or surface mining ([E21C 45/00](#) takes precedence);  
Lay-outs therefor (for peat [E21C 49/00](#))

WARNING

Groups [E21C 41/28](#) to [E21C 41/14](#) are no longer used for classification.

Documents are reclassified to groups [E21C 41/16](#), [E21C 41/26](#) and [E21C 41/32](#)

E21C 41/14

- {for other specified minerals, e.g. gold, mercury, other heavy metals, sulfur, slate; for clay}

Project: N/A (F01D)

F01D

**NON-POSITIVE DISPLACEMENT MACHINES OR ENGINES, e.g.  
STEAM TURBINES (machines or engines for liquids [F03](#); non-positive  
displacement pumps [F04D](#))**

NOTES

1. This subclass covers:

- non-positive-displacement engines for elastic fluids, e.g. steam turbines;
- non-positive-displacement engines for liquids and elastic fluids;
- non-positive-displacement machines for elastic fluids;
- non-positive-displacement machines for liquids and elastic fluids.

2. Attention is drawn to the Notes preceding class [F01](#), especially as regards the definitions of "reaction type", e.g. with airfoil-like blades, and "impulse type", e.g. bucket turbines.

WARNING

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

~~F01D 5/32~~[F01D 5/32](#) covered by [F01D 5/30](#)

Project: N/A (F01K)

U F01K 1/00

**Steam accumulators (use of accumulators in steam engine plants  
[F01K 3/00](#))**

F01K 1/04

- for storing steam in a liquid, e.g. ~~Ruth's~~[Ruth's](#) type (in alkali to increase steam pressure [F22B 1/20](#))

**Project: MP0124 (F01N)**

- U F01N 3/00** Exhaust or silencing apparatus having means for purifying, rendering innocuous, or otherwise treating exhaust (electric control [F01N 9/00](#); monitoring or diagnostic devices for exhaust-gas treatment apparatus [F01N 11/00](#); {collecting or removing exhaust gases of vehicle engines in workshops [B08B 15/00](#), on highways [E01C 1/005](#)})
- M F01N 3/02** . for cooling, or for removing solid constituents of, exhaust (by means of electric or electrostatic separators [F01N 3/01](#) ; {mixing air with exhaust in tailpipes [F01N 13/082](#), [F01N 13/20](#)})
- U F01N 3/08** . for rendering innocuous (using electric or electrostatic separators [F01N 3/01](#); chemical aspects [B01D 53/92](#))
- U F01N 3/10** . . by thermal or catalytic conversion of noxious components of exhaust (by using other chemical processes, chemical aspects of catalytic conversion, e.g. using specified catalysts, [B01D 53/34](#))
- U F01N 3/24** . . . characterised by constructional aspects of converting apparatus (filtering in combination with catalytic reactors [F01N 3/035](#))
- U F01N 3/28** . . . . Construction of catalytic reactors
- U F01N 3/2839** . . . . . {Arrangements for mounting catalyst support in housing, e.g. with means for compensating thermal expansion or vibration}
- M F01N 3/2853** . . . . . {using mats or gaskets between catalyst body ~~or~~and housing}
- M F01N 5/00** Exhaust or silencing apparatus combined or associated with devices profiting ~~by~~*from* exhaust energy (~~predominant aspects of such devices, see the relevant classes for the devices~~; using kinetic or wave energy of exhaust gases in exhaust systems for charging [F02B](#); *predominant aspects of such devices, see the relevant classes for the devices*)
- U F01N 2610/00** Adding substances to exhaust gases
- U F01N 2610/14** . Arrangements for the supply of substances, e.g. conduits
- M F01N 2610/1493** . . ~~Means for prevention~~*Purging the reducing agent out of clogging, e.g. purging the conduits or nozzle*

**Project: N/A (F02B)**

- F02B 49/00** Methods of operating air-compressing compression-ignition engines involving introduction of small quantities of fuel in the form of a fine mist into the air in the ~~engine`s~~*engine's* intake

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

- U F02D 33/00** Controlling delivery of fuel or combustion-air, not otherwise provided for {{using exhaust gas sensors [F02D 35/0023](#), [F02D 35/0046](#)}}
- F02D 33/003** . {Controlling the feeding of liquid fuel from storage containers to carburettors or fuel-injection apparatus (control of electrical fuel pumps [F02D 41/3082](#), controlling fuel flow to a common rail [F02D 41/3845](#)); Failure or leakage prevention; Diagnosis or detection of failure; Arrangement of sensors in the fuel system; Electric wiring; Electrostatic discharge}}
- U F02D 41/00** Electrical control of supply of combustible mixture or its constituents ([F02D 43/00](#) takes precedence)
- F02D 41/009** . {using means for generating position or synchronisation signals}
- F02D 41/0097** . {using means for generating speed signals}



**Project: N/A (F02M)****F02M 1/00****Carburettors with means for facilitating engine's engine's starting or its idling below operational temperatures**NOTE- in this group the following indexing codes are used: [F02M 2700/4302](#)**U F02M 35/00****Combustion-air cleaners, air intakes, intake silencers, or induction systems specially adapted for, or arranged on, internal-combustion engines (air cleaners in general [B01D](#))**

U F02M 35/02

· Air cleaners

U F02M 35/04

· · specially arranged with respect to engine, {to intake system or specially adapted to vehicle}; Mounting thereon; {Combinations with other devices (combined with silencers [F02M 35/14](#))}

F02M 35/06

· · · combined or associated with engine's engine's cooling blower or fan, or with flywheel

**Project: N/A (F04B)****U F04B 47/00****Pumps or pumping installation specially adapted for raising fluids from great depths, e.g. well pumps (by using positive or negative pressurised fluid medium acting directly on the liquid to be pumped [F04F 1/00](#))**

U F04B 47/14

· Counterbalancing

F04B 47/145

· · {with fluid means}

**Project: N/A (F05B)****U F05B 2270/00****Control**

U F05B 2270/10

· Purpose of the control system

U F05B 2270/106

· · to produce clean exhaust gases

F05B 2270/1062

· · · with as little NOx's/NOx's as possible

U F05B 2270/50

· Control logic embodiment by

F05B 2270/504

· · electronic means, e.g. electronic tubes, transistors or IC's/C's within an electronic circuit

**Project: N/A (F05D)****U F05D 2270/00****Control**

U F05D 2270/50

· Control logic embodiments

F05D 2270/54

· · by electronic means, e.g. electronic tubes, transistors or IC's/C's within an electronic circuit

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

Attention is drawn to the following places:

[A01D 69/08](#), [A01D 69/10](#) Clutches or brakes of harvesting machines for grass or 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~~*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](#) covered by [F16D 63/00](#).

- |   |               |   |
|---|---------------|---|
| U | F16D 3/00     | <b>Yielding couplings, i.e. with means permitting movement between the connected parts during the drive (couplings disconnectable simply by axial movement <a href="#">F16D 1/10</a>; slip couplings <a href="#">F16D 7/00</a>)</b>       |
| U | F16D 3/16     | • Universal joints in which flexibility is produced by means of pivots or sliding or rolling connecting parts   |
|   | F16D 3/26     | • <del>Hooke`s</del> <i>Hooke's</i> joints or other joints with an equivalent intermediate member to which each coupling part is pivotally or slidably connected ( <a href="#">F16D 3/18</a> , <a href="#">F16D 3/20</a> take precedence) |
| U | F16D 23/00    | <b>Details of mechanically-actuated clutches not specific for one distinct type</b>   |
| U | F16D 23/02    | • Arrangements for synchronisation, also for power-operated clutches (shape or mounting of interengaging parts of clutch members to facilitate engagement <a href="#">F16D 11/08</a> )  |
|   | F16D 23/025   | • <del>{</del> <i>{</i> Synchro rings <i>}</i>  |
| U | F16D 65/00    | <b>Parts or details (similar members for clutches <a href="#">F16D 13/58</a>)</b>   |
| U | F16D 65/02    | • Braking members; Mounting thereof (friction linings or attachment thereof <a href="#">F16D 69/00</a> )  |
|   | F16D 2065/024 | • {the braking surface being inclined with respect to the <del>rotor`s</del> <i>rotor's</i> axis of rotation at an angle other than 90 degrees, e.g. comprising a conical rotor}  |
| U | F16D 2121/00  | <b>Type of actuator operation force</b>   |
|   | F16D 2121/005 | • <del>{</del> <i>{</i> unspecified force for releasing a normally applied brake <i>}</i>   |
| U | F16D 2125/00  | <b>Components of actuators</b>  |
| U | F16D 2125/02  | • Fluid-pressure mechanisms   |
|   | F16D 2125/023 | • <del>{</del> <i>{</i> Pumps <i>}</i>  |

F16D 2125/026	<ul style="list-style-type: none"> <li>• • {Pressure-to-pressure converters, e.g. hydropneumatic}</li> </ul>
U F16D 2125/18	<ul style="list-style-type: none"> <li>• Mechanical mechanisms</li> </ul>
U F16D 2125/20	<ul style="list-style-type: none"> <li>• • converting rotation to linear movement or vice-versa</li> </ul>
U F16D 2125/34	<ul style="list-style-type: none"> <li>• • • acting in the direction of the axis of rotation</li> </ul>
U F16D 2125/40	<ul style="list-style-type: none"> <li>• • • • Screw-and-nut</li> </ul>
F16D 2125/405	<ul style="list-style-type: none"> <li>• • • • • {with differential thread}</li> </ul>
U F16D 2125/44	<ul style="list-style-type: none"> <li>• • transmitting rotation</li> </ul>
U F16D 2125/56	<ul style="list-style-type: none"> <li>• • • Shafts for transmitting torque directly</li> </ul>
F16D 2125/565	<ul style="list-style-type: none"> <li>• • • • {flexible}</li> </ul>
U F16D 2125/58	<ul style="list-style-type: none"> <li>• • transmitting linear movement</li> </ul>
F16D 2125/582	<ul style="list-style-type: none"> <li>• • • {Flexible element, e.g. spring, other than the main force generating element}</li> </ul>
F16D 2125/585	<ul style="list-style-type: none"> <li>• • • • {arranged in parallel with a force-applying member}</li> </ul>
F16D 2125/587	<ul style="list-style-type: none"> <li>• • • {Articulation e.g. ball-socket}</li> </ul>
U F16D 2125/64	<ul style="list-style-type: none"> <li>• • • Levers</li> </ul>
F16D 2125/645	<ul style="list-style-type: none"> <li>• • • • {with variable leverage, e.g. movable fulcrum}</li> </ul>
<b>U F16D 2127/00</b>	<b>Auxiliary mechanisms</b>
F16D 2127/001	<ul style="list-style-type: none"> <li>• {for automatic or self-acting brake operation}</li> </ul>
F16D 2127/002	<ul style="list-style-type: none"> <li>• • {speed-responsive}</li> </ul>
F16D 2127/004	<ul style="list-style-type: none"> <li>• • {direction-responsive}</li> </ul>
F16D 2127/005	<ul style="list-style-type: none"> <li>• • {force- or torque-responsive}</li> </ul>
F16D 2127/007	<ul style="list-style-type: none"> <li>• {for non-linear operation}</li> </ul>
F16D 2127/008	<ul style="list-style-type: none"> <li>• {Trigger mechanisms}</li> </ul>
U F16D 2127/08	<ul style="list-style-type: none"> <li>• Self-amplifying or de-amplifying mechanisms</li> </ul>
F16D 2127/085	<ul style="list-style-type: none"> <li>• • {having additional fluid pressure elements}</li> </ul>
<b>U F16D 2129/00</b>	<b>Type of operation source for auxiliary mechanisms</b>
U F16D 2129/04	<ul style="list-style-type: none"> <li>• Mechanical</li> </ul>
F16D 2129/043	<ul style="list-style-type: none"> <li>• • {Weights}</li> </ul>
F16D 2129/046	<ul style="list-style-type: none"> <li>• • {Flywheels}</li> </ul>
U F16D 2129/06	<ul style="list-style-type: none"> <li>• Electric or magnetic</li> </ul>
F16D 2129/065	<ul style="list-style-type: none"> <li>• • {Permanent magnets}</li> </ul>

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

<b>U F16F 15/00</b>	<b>Suppression of vibrations in systems ({damping of non-rotary systems using inertia effect <a href="#">F16F 7/10</a>; prevention or isolation of vibrations in machine tools <a href="#">B23Q 11/0032</a>; suppression of driveline vibrations in hybrid vehicle transmissions <a href="#">B60W 30/20</a> ; vehicle seat suspension devices <a href="#">B60N 2/50</a>; {methods or devices for protecting against, or damping of, acoustic waves, e.g. sound <a href="#">G10K 11/16</a>}); Means or arrangements for avoiding or reducing out-of-balance forces, e.g. due to motion ({vibration absorbing or balancing means for aircraft propellers <a href="#">B64C 11/008</a>, for rotorcraft rotors <a href="#">B64C 27/001</a> ; testing static and dynamic balance of machines or structures <a href="#">G01M 1/00</a>)</b>
---------------------	---

- U F16F 15/02
  - Suppression of vibrations of non-rotating, e.g. reciprocating systems; Suppression of vibrations of rotating systems by use of members not moving with the rotating systems ({[F16F 15/005](#) takes precedence } ; layered products [B32B](#); suppression of vibration in ships [B63](#); {relieving load on bearings, using magnetic means [F16C 39/06](#)})
- U F16F 15/04
  - • using elastic means (single elements or their attachment [F16F 1/00](#) to [F16F 13/00](#)); ({[F16F 15/023](#), [F16F 15/03](#) take precedence})
- F16F 15/08
  - • • with rubber springs {(grommet- or bushing-type resilient mountings [F16F 1/3732](#), [F16F 1/38](#)); with springs made of rubber and metal (arrangement of internal-combustion or jet-propulsion units [B60K 5/12](#); mounting of propulsion plants on vessels [B63H 21/30](#); mounting of vehicle drivers' cabs [B62D 33/0604](#))}
- U F16F 15/10
  - Suppression of vibrations in rotating systems by making use of members moving with the system (by balancing [F16F 15/22](#); {yielding couplings [F16D 3/00](#) } ; with flywheels acting variably or intermittently [F16H](#); {construction providing resilience or vibration-damping for gear elements [F16H 55/14](#)})
- U F16F 15/12
  - • using elastic members or friction-damping members, e.g. between a rotating shaft and a gyratory mass mounted thereon ({[F16F 15/14](#) } , [F16F 15/16](#) take precedence)
- U F16F 15/131
  - • • the rotating system comprising two or more gyratory masses
- U F16F 15/139
  - • • • characterised by friction-damping means ({[F16F 15/13128](#) takes precedence})
- F16F 15/1392
  - • • • • {characterised by arrangements for axially clamping or positioning or otherwise influencing the frictional plates}}

## Project: MP0124 (F16H)

- U F16H 25/00 **Gearings comprising primarily only cams, cam-followers and screw-and-nut mechanisms**
- U F16H 25/18
  - for conveying or interconverting oscillating or reciprocating motions
- U F16H 25/20
  - • Screw mechanisms (with automatic reversal [F16H 25/12](#))
- U F16H 25/22
  - • • with balls, rollers, or similar members between the co-operating parts; Elements essential to the use of such members
- U F16H 25/2285
  - • • • {with rings engaging the screw shaft with the inner perimeter, e.g. using inner rings of a ball bearing}
- M F16H 25/2295
  - • • • • {Rings which are inclined or can pivot around an axis perpendicular to the screw shaft [axis](#)}
- U F16H 59/00 **Control inputs to {control units of} change-speed-, or reversing-gearings for conveying rotary motion**
- U F16H 59/02
  - Selector apparatus

NOTE  
Selection apparatus of general applicability or of interest apart from its use in control of gearings conveying rotary motion is also classified in subclass [G05G](#)
- U F16H 2059/0239
  - • {Up- and down-shift selection by repeated movement (mechanical step by step selection devices [F16H 63/14](#))}
- M F16H 2059/0247
  - • • {with lever or [pedal](#)[paddle](#) behind steering wheel}
- U F16H 59/36
  - Inputs being a function of speed
- M F16H 2059/363
  - • {Rate of change of [input shaft speed, e.g. of engine or motor speed](#)[shaft](#)}

**Project: N/A (F16J)****F16J****PISTONS {(specially adapted for dampers [F16F 9/32](#))}; CYLINDERS; SEALINGS**NOTE

Attention is drawn to the following places:

[A47J 27/08](#) Pressure cookers  
[E04B 1/68](#) Sealing building joints  
[E05C 9/00](#) Multi-point fastening of wings in general  
~~F01B~~[F01B](#) Machines or engines in general or of reciprocating type, e.g. cylinders peculiar to steam engines  
[F01B 31/28](#)  
[F02F 1/00](#) Cylinders for combustion engines  
[F02F 3/00](#) Pistons for combustion engines  
[F04D 29/08](#) Sealings of non-positive displacement pumps  
[F17B 1/04](#) Sealing devices for sliding parts of gas holders of variable capacity  
[F28F 9/04](#) Arrangements for sealing elements into header boxes or end plates of heat-exchangers.

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:

[F16J 15/53](#) covered by [F16J 15/43](#)

**Project: N/A (F16K)****F16K****VALVES; TAPS; COCKS; ACTUATING-FLOATS; DEVICES FOR VENTING OR AERATING {(devices for emptying and evacuating the excess liquid in valves or conduits [F16L 55/07](#))}**NOTE

Attention is drawn to the following places:

[A47J 27/09](#) Safety devices for pressure cookers  
[A47J 31/46](#) Dispensing spouts, drain valves or like beverage-making apparatus  
[A61B 5/0235](#) Valves specially adapted for measuring pressure in heart or blood vessels  
[A61F 2/24](#) Heart valves  
[A61M 16/20](#) Valves specially adapted for medical respiratory devices  
[A61M 39/00](#) Tube connectors, tube couplings, valves or branch units specially adapted for medical use in general  
[A62B 9/02](#) Valves for respiratory apparatus  
[A62B 18/10](#) Valves for breathing masks or helmets  
[A62C](#) Fire extinguishers  
{[B01D 35/04](#) Plug, tap, or cock filters }  
[B05B](#) Nozzles, spray heads or other discharge apparatus for spraying or atomising  
[B60C 29/00](#) Arrangements of tyre-inflating valves relative to tyres or wheel rims; Connection of valves to wheel rims, tyres or other inflatable elastic bodies  
[B60G 17/048](#) Valves specially adapted for adjusting vehicle fluid-spring characteristics  
[B60T](#) Valves specially adapted for vehicle brake control systems

<a href="#">B62D 5/08</a>	Vehicle power-assisted steering characterised by the type of valve used
<a href="#">B63B 7/00</a> ,	
<a href="#">B63C 9/00</a>	Arrangement of inflating valves for floatable life-saving equipment
<a href="#">B65D 47/04</a>	Container closures with discharging valves
<a href="#">B65D 90/32</a>	Safety valves for large containers
<a href="#">B65D 90/54</a>	Gates or closures on large containers
<a href="#">B67C 3/28</a>	Flow control devices for bottling liquids
<a href="#">B67D</a>	Dispensing, delivering or transferring liquids
<a href="#">{C21B 9/12</a>	Hot-blast valves for blast
<a href="#">furnaces</a>	}
<a href="#">E02B 8/00</a>	Details, e.g. valves, of barrages or weirs
<a href="#">E02B 13/02</a>	Closures for irrigation conduits
<a href="#">{E03C 1/04</a>	Water-basin installations specially adapted for wash-basins or baths
<a href="#">{E03C 1/05</a>	Arrangements on wash-basins for the remote control of taps
<a href="#">E03D</a>	Flushing valves for water-closets or urinals
<a href="#">{E03F 7/04</a>	Valves for preventing return flow in sewer systems
<a href="#">E05F 3/12</a>	Valve arrangements in door closers
<a href="#">E21B 21/10</a>	Valve arrangements in drilling-fluid circulation systems
<a href="#">E21B 34/00</a>	Valve arrangements for boreholes or wells
<a href="#">{E21D 15/51</a>	Arrangement of relief valves in hydraulic mine props
<a href="#">F01B 25/10</a>	Working-fluid valves for controlling machines or engines in general or of positive-displacement type
<a href="#">F01D 17/10</a>	Final actuators for controlling non-positive displacement machines or engines
<a href="#">F01L</a>	Cyclically operated valves for machines or engines
<a href="#">F02D 9/08</a>	Throttle valves for controlling combustion engines
<a href="#">F02K 9/58</a>	Propellant feed valves for rocket-engines
<a href="#">F02M</a>	Carburettors, fuel injection
<a href="#">F02M 59/46</a>	Valves for fuel injection pumps
<a href="#">F04</a>	Pumps
<a href="#">F16F 9/34</a>	Valves for shock absorbers
<a href="#">F16L 29/00</a> ,	
<a href="#">F16L 37/28</a>	Pipe joints or quick-acting couplings with fluid cut-off means
<a href="#">F16L 55/00</a>	Arrangement of valves in pipes
<a href="#">F16L 55/055</a>	Valves specially adapted to prevent or minimise the effect of water hammer
<a href="#">F16L 55/46</a>	Launching devices for pigs or moles
<a href="#">F16N 23/00</a>	Check valves for lubrication systems
<a href="#">{<del>F16T</del> F16T</a>	Draining-off liquids from steam traps}
<a href="#">F17C 13/04</a>	Arrangement of valves in pressure vessels



<a href="#">F22B 37/44</a>	Arrangement of safety valves on steam boilers
<a href="#">F22D 5/34</a>	Application of valves to automatic water-feed in boiler
<a href="#">F23L 13/00</a>	Valves for air supply control to burners
<a href="#">F23Q 2/16</a>	Valves for lighters with gaseous fuel and adjustable flame
<a href="#">F24C 3/12</a> , <a href="#">F24C 5/16</a>	Arrangement of valves on stoves or ranges
<a href="#">F24F</a>	Air conditioning; Ventilation
<a href="#">F25B 41/04</a>	Disposition of fluid circulation valves in refrigeration machines
<a href="#">G05D</a>	Controlling non-electric variables
<a href="#">G10B 3/06</a>	Valves for organs
<a href="#">G10D 9/04</a>	Valves for other wind-actuated musical instruments
<a href="#">G21C 9/06</a>	Safety valves structurally associated with nuclear reactors
<a href="#">H01M 2/12</a>	Vent plugs in batteries or cells

#### WARNING

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

<a href="#">F16K 31/11</a>	covered by	<a href="#">F16K 31/06</a> ,	<a href="#">F16K 31/08</a> ,
<a href="#">F16K 31/10</a>			
<a href="#">F16K 31/64</a>	" "	<a href="#">G05D</a>	
<a href="#">F16K 31/66</a>	" "	<a href="#">F16K 31/06</a> ;	<a href="#">H01F</a>
<a href="#">F16K 31/68</a>	" "	<a href="#">G05D</a>	
<a href="#">F16K 31/70</a>	" "	<a href="#">F16K 31/002</a>	
<a href="#">F16K 31/72</a>	" "	<a href="#">F16K 31/00</a>	

#### Project: N/A (F16L)

F16L

#### PIPES; JOINTS OR FITTINGS FOR PIPES; SUPPORTS FOR PIPES, CABLES OR PROTECTIVE TUBING; MEANS FOR THERMAL INSULATION IN GENERAL

##### NOTES

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

- "pipe" means a conduit of closed cross-section, which is specially adapted to convey fluids, materials or objects;
- "hose" means a pipe, as defined above, which has flexibility as an essential characteristic.

2. Attention is drawn to the following places:

[A61M 39/00](#) Tube connectors, tube couplings or branch units, specially adapted for medical use

[B05B 1/20](#) Perforated pipes

[B60T 17/04](#) Arrangement of piping or air hoses in brake systems

[B63B 35/03](#) Pipe-laying vessels

[B64D 39/04](#) Adaptation of hose constructions for refuelling aircraft during flight

[B65G 51/00](#) Conveying articles through pipes or tubes by fluid flow or pressure

[B65G 53/00](#) Conveying materials in bulk through pipes or tubes

[B67D 7/38](#) Arrangements of hoses in apparatus for transferring liquids, e.g. fuel, from bulk

to vehicles or portable containers  
[E01D 19/10](#) Fastening of pipes or cables to bridges  
~~E03B~~ [E03B](#) Water supply installations  
[E03D 11/17](#) Means for connecting water-closet bowls to the flushing pipe  
[E03D 11/18](#) Siphons for water-closets  
[E03F 3/04](#) Pipes or fittings specially adapted to sewers  
[E04D 13/08](#) Down pipes for roof drainage; Clamping means therefor  
[E04F 17/00](#) Vertical ducts, channels in buildings, e.g. chimneys  
[E21F 1/04](#) Air ducts for ventilation of mines or tunnels;  
Connections therefor  
[E21F 17/02](#) Suspension devices for tubes or the like in mines or tunnels  
~~F01N~~ [F01N](#) Gas flow silencers or exhaust apparatus for machines or engines  
{[F16B 7/00](#) Connections of rods or tubes}  
[F16N 21/00](#) Conduits, junctions for lubrication systems  
[F17C 3/02](#) Thermal insulation of vessels not under pressure for storing liquefied or solidified gases, e.g. Dewar flask  
{[F17D](#) Pipe-line systems, pipe-lines}  
[F22B 37/10](#) Water tubes of steam boilers  
[F23J 13/04](#) Joints, connections for chimneys or flues  
[F24H 9/12](#) Connecting circulation pipes to heaters  
[F28F 9/04](#) Arrangements for sealing elements into header boxes or end plates of heat-exchangers  
[G21C 15/22](#) Structural association of coolant tubes with headers or other pipes in nuclear reactors  
[H02G 3/04](#) Protective tubing or conduits for electric cables  
[H02G 3/26](#) Installations of electric cables or lines, or protective tubing on or in walls, ceilings or floors.

#### 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:

~~F16L 3/21~~ [F16L 3/21](#) covered by [F16L 3/2053](#), [F16L 3/2056](#);  
~~F16L 13/013~~ [F16L 13/013](#) covered by [F16L 13/007](#);  
[F16L 19/03](#) covered by [F16L 19/0212](#);  
[F16L 59/05](#) covered by [F16L 59/021](#).

- U F16L 9/00 Rigid pipes {(steam boiler tubes [F22B 37/10](#))}
- U F16L 9/18
  - Double-walled pipes; Multi-channel pipes or pipe assemblies (joints therefor [F16L 39/00](#))
- F16L 9/20
  - • {Pipe assemblies}
- U F16L 17/00 Joints with packing adapted to sealing by fluid pressure ({for universal joints with partly spherical engaging surfaces [F16L 27/067](#); joints allowing adjustment or movement only about the axis of one pipe [F16L 27/08](#); joints comprising a flexible connection only [F16L 27/10](#); joints allowing substantial longitudinal adjustment or movement [F16L 27/12](#); for hoses [F16L 33/16](#); couplings of the quick acting type [F16L 37/00](#);) compensating devices [F16L 51/00](#); sealings tightened by external pressure, inflatable packings [F16J 15/00](#))
- U F16L 17/02
  - with sealing rings arranged between outer surface of pipe and inner surface of sleeve or socket

- U F16L 17/03      • • having annular axial lips  
 F16L 17/032      • • • {the sealing rings having only one lip}

**Project: MP0123 (F21K)****M F21K****LIGHT SOURCES NOT OTHERWISE PROVIDED FOR****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:

~~F21K 5/04 covered by G03B 15/0457~~  
~~F21K 5/06 " " G03B 15/0442~~  
~~F21K 5/08 " " F21K 5/02,~~  
~~G03B 15/0442~~  
~~F21K 5/10 " " G03B 15/0442~~  
~~F21K 5/12 " " F21K 5/023~~  
~~F21K 5/14 " " F21K 5/026,~~  
~~G03B 15/0489~~  
~~F21K 5/16 " " G03B 15/0452~~  
~~F21K 5/18 " " G03B 15/0452~~  
~~F21K 5/20 " " G03B 15/0447~~  
~~F21K 5/22 " " G03B 15/0442~~

2. Groups F21K 9/00 to F21K 9/90 do not correspond to former or current IPC groups.

Concordance CPC : IPC for these groups is as follows:-

- F21K 9/00 to F21K 9/90 : F21K 99/00

**Project: N/A (F21L)****F21L 11/00**

Portable lighting devices with built-in batteries or accumulators, not covered by group [F21L 4/00](#) or [F21L 7/00](#), e.g. miners' hand-lamps

**Project: MP0123 (F21S)****U F21S 8/00**

Lighting devices intended for fixed installation ([F21S 9/00](#), [F21S 10/00](#) take precedence; using a string or strip of light sources [F21S 4/00](#))

**M F21S 8/03**

- {of surface-mounted type ([F21S 8/02](#), [F21S 8/04](#) take precedence; details of wall or floor bases [F21V 21/02](#))}

**WARNING**

Group F21S 8/03 does not correspond to former or future IPC groups.  
 Correspondence CPC : IPC for this group is as following: - F21S 8/03 : F21S 8/00

**M F21S 48/00**

{Lighting devices or systems specially adapted for vehicles (arrangements or adaptations for ships or waterborne vessels [B63B 45/00](#))}

**WARNING**

Groups F21S 48/00 to F21S 48/34 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - F21S 48/00 - F21S 48/34 : F21S 8/10

**Project: N/A (F21V)****U F21V 7/00**

Reflectors for light sources (characterised by cooling arrangements [F21V 29/505](#))

**U F21V 7/04**

- Optical design ([F21V 7/22](#) takes precedence)

**F21V 7/041**

- • {with conical or pyramidal surface}

F21V 7/043	• • {with cylindrical surface}
F21V 7/045	• • {with spherical surface}
F21V 7/046	• • {with involute curvature}
F21V 7/048	• • {with facets structure}
<b>F21V 13/00</b>	<b>Producing particular characteristics or distribution of the light emitted by means of a combination of elements specified in two or more of main groups <a href="#">F21V 1/00</a> <a href="#">F21V 11/00</a> (by means of a combination of two or more elements covered by a single one of main groups <a href="#">F21V 1/00</a> <a href="#">F21V 11/00</a>, see the relevant group; changing the characteristics or distribution of the light emitted by adjustment of parts <a href="#">F21V 14/00</a>)</b>

**Project: N/A (F21W)**

<b>U F21W 2121/00</b>	<b>Use or application of lighting devices or systems for decorative purposes</b>
F21W 2121/002	• {Candle holders for birthday or anniversary cakes}
F21W 2121/004	• {mounted on the exterior of houses or other buildings to illuminate parts thereof}
F21W 2121/006	• {for illumination or simulation of snowy or iced items, e.g. icicle}
F21W 2121/008	• {for simulation of a starry sky or firmament}
<b>U F21W 2131/00</b>	<b>Uses or applications of lighting devices or systems not provided for in codes <a href="#">F21W 2101/00</a> to <a href="#">F21W 2121/00</a></b>
U F21W 2131/10	• Outdoor lighting
F21W 2131/1005	• • {of working places, building sites or the like}
U F21W 2131/30	• Lighting for domestic or personal use
F21W 2131/3005	• • {for books, i.e. reading lights attachable to books}

**Project: N/A (F23C)**

<b>U F23C 5/00</b>	<b>Disposition of burners with respect to the combustion chamber or to one another; Mounting of burners in combustion apparatus (<a href="#">F23C 1/00</a>, <a href="#">F23C 15/00</a> take precedence)</b>
U F23C 5/08	• Disposition of burners
F23C 5/10	• • {to obtain a flame ring}
F23C 5/12	• • • {for pulverulent fuel}

**Project: N/A (F23N)**

<b>U F23N 2029/00</b>	<b>Flame sensors</b>
F23N 2029/22	• the <del>sensor's</del> <i>sensor's</i> sensivity being variable

**Project: N/A (F23Q)**

<b>F23Q</b>	<b>IGNITION (devices or installations peculiar to internal-combustion engines <a href="#">F02P</a>; of cigarettes or tobacco <a href="#">A24F</a>; compositions therefor, chemical igniters <a href="#">C06C</a>); <del>Extinguishing</del> <i>EXTINGUISHING-devices</i> <i>DEVICES</i></b>
<b>U F23Q 2/00</b>	<b>Lighters containing fuel, e.g. for cigarettes</b>
F23Q 2/32	• Lighters characterised by being combined with other objects ( <del>combinations with smokers' equipment</del> <i>A24F combinations with smokers' equipment</i> <i>A24F</i> )

**Project: MP0124 (F25B)**

<b>M F25B 13/00</b>	<b>Compression machines, plant, or systems <del>with</del> <i>reversible</i> <i>with reversible</i> cycle (defrosting cycles <a href="#">F25B 47/02</a>)</b>
---------------------	--

- U F25B 2309/00 Gas cycle refrigeration machines**
- U F25B 2309/14 · Compression machines, plant or systems characterised by the cycle used
  - M F25B 2309/1419 · · Pulse-tube cycles with pulse tube having a basic pulse tube ~~refrigerator~~refrigerator [PTR], i.e. comprising a tube with basic schematic
- U F25B 2400/00 General features or devices for refrigeration machines, plants or systems, combined heating and refrigeration systems or heat-pump systems, i.e. not limited to a particular subgroup of F25B**
- M F25B 2400/06 · Several compression ~~machines~~cycles arranged in parallel

**Project: MP0124 (F25D)**

- U F25D 2400/00 General features of, or devices for refrigerators, cold rooms, ice-boxes, or for cooling or freezing apparatus not covered by any other subclass**
- M F25D 2400/26 · Refrigerating devices for cooling wearing apparel, e.g. garments, hats, shoes or gloves
- U F25D 2700/00 Means for sensing or measuring; Sensors therefor**
- U F25D 2700/12 · Sensors measuring the inside temperature
  - M F25D 2700/123 · · more than one sensor measuring the inside ~~air~~temperature in a compartment

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

F25J

**LIQUEFACTION, SOLIDIFICATION OR SEPARATION OF GASES OR GASEOUS {~~or liquefied gaseous~~OR LIQUEFIED GASEOUS} MIXTURES BY PRESSURE AND COLD TREATMENT {~~or by bringing them into the supercritical state~~OR BY BRINGING THEM INTO THE SUPERCRITICAL STATE** (cryogenic pumps [F04B 37/08](#); gas storage vessels, gas holders [F17](#); filling vessels with, or discharging from vessels, compressed, liquefied or solidified gases [F17C](#); refrigeration machines, plants, or systems [F25B](#))}

**Project: MP0124 (F25J)**

- U F25J 1/00 Processes or apparatus for liquefying or solidifying gases or gaseous mixtures {(for ammonia in general [C01C 1/00](#); solidification of carbonic acid [C01B 31/22](#); recovering volatile solvents by condensation [B01D 5/00](#); vapor recovery systems combined with filling nozzles [B67D 7/54](#))(not used)}**
- U F25J 1/02 · requiring the use of refrigeration, e.g. of helium or hydrogen {Details and kind of the refrigeration system used; Integration with other units or processes; Controlling aspects of the process (not used)}
  - U F25J 1/0228 · · {Coupling of the liquefaction unit to other units or processes, so-called integrated processes (combined plants, e.g. engine plant combined with an industrial process [F01K 23/064](#); gas turbine plants in combination with other processes [F02C 6/00](#))}
  - U F25J 1/0235 · · · {Heat exchange integration}
  - U F25J 1/0237 · · · · {integrating refrigeration provided for liquefaction and purification/ treatment of the gas to be liquefied, e.g. heavy hydrocarbon removal from natural gas (details related to rectification [F25J 3/02](#); details related to partial condensation [F25J 3/06](#); working-up natural gas [C10L 3/10](#))}
  - M F25J 1/0238 · · · · {Purification/ ~~or~~ treatment step is integrated within one refrigeration cycle only, i.e. the same or single refrigeration cycle provides feed ~~or gas cooling (if present) and~~ overhead gas cooling}

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

- U F41G 1/00** Sighting devices (for indirect laying of fire [F41G 3/16](#); bombsights [F41G 3/24](#); {structurally associated with laser telemeters [F41G 3/065](#); mounting tubular or beam shaped aiming devices on firearms [F41G 11/001](#)})
- U F41G 1/38** . Telescopic sights specially adapted for smallarms or ordnance (telescopic sights in general [G02B](#)); Supports or mountings therefor
- U F41G 1/393** . . Mounting telescopic sights on ordnance; Transmission of sight movements to the associated gun
- F41G 1/3935** . . . {Transmission of sight movements to the associated gun}
- U F41G 3/00** Aiming means; Laying means (sighting-devices [F41G 1/00](#); {mounting tubular or beam shaped aiming devices on firearms [F41G 11/001](#);} determining direction, distance or velocity by use of radio or other waves [G01S](#); computer [G06](#); aerials [H01Q](#))
- U F41G 3/26** . Teaching or practice apparatus for gun-aiming or gun-laying {(shooting games [A63F 9/02](#); light- or radiation-emitting guns [F41A 33/02](#); targets therefor [F41J](#); responders, transponders for radar, sonar, lidar [G01S 13/767](#), [G01S 15/74](#), [G01S 17/74](#)})
- U F41G 3/2616** . . {using a light emitting device}
- U F41G 3/2622** . . . {for simulating the firing of a gun or the trajectory of a projectile}
- F41G 3/2644** . . . . {Displaying the trajectory or the impact point of a simulated projectile in the ~~gunner's~~gunner's sight}

**Project: N/A (F42C)**

- U F42C 15/00** Arming-means in fuzes; Safety means for preventing premature detonation of fuzes or charges
- F42C 15/005** . {Combination-type safety mechanisms i.e. two or more safeties are moved in a predetermined sequence to each other}

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

- U G01B 7/00** Measuring arrangements characterised by the use of electric or magnetic means
- U G01B 7/16** . for measuring deformation in a solid, e.g. by resistance strain gauge
- G01B 7/18** . . {using change in resistance}
- G01B 7/20** . . . {formed by printed-circuit technique}
- G01B 7/22** . . {using change in capacitance}
- 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 11/16** . for measuring the deformation in a solid, e.g. optical strain gauge
- G01B 11/18** . . {using photoelastic elements}
- G01B 11/20** . . {using brittle lacquer}

**Project: N/A (G01C)****G01C**

**MEASURING DISTANCES, LEVELS OR BEARINGS; SURVEYING; NAVIGATION; GYROSCOPIC INSTRUMENTS; PHOTOGRAMMETRY OR VIDEOGRAMMETRY** (measuring dimensions or angles of objects [G01B](#); measuring liquid level [G01F](#); measuring intensity or direction of magnetic fields, other than the **earth's** field, in general [G01R](#); radio navigation, determining distance or velocity by use of propagation effects, e.g. Doppler effects, propagation time, of radio waves, analogous arrangements using other waves [G01S](#); optical systems therefor [G02B](#); maps, globes [G09B](#))

**NOTES**

1. In this subclass, the following term is used with the meaning indicated:  
"navigation" means determining the position and course of land vehicles, ships, aircraft, and space vehicles.
2. Attention is drawn to the Notes following the title of class [G01](#).

**G01C 5/00**

**Measuring height; Measuring distances transverse to line of sight; Levelling between separated points; Surveyors' levels** ([G01C 3/20](#), [G01C 3/30](#) take precedence; tracing profiles [G01C 7/00](#); levels indicating inclination at a single point [G01C 9/00](#))

**U G01C 15/00**

**surveying instruments or accessories not provided for in groups [G01C 1/00](#) to [G01C 13/00](#)**

## U G01C 15/02

- Means for marking measuring points

## G01C 15/06

- • Surveyors' staffs; Movable markers

**U G01C 17/00**

**Compasses; Devices for ascertaining true or magnetic north for navigation or surveying purposes (using gyroscopic effect [G01C 19/00](#); for geophysical or prospecting purposes [G01V 3/00](#))**

## U G01C 17/02

- Magnetic compasses

## U G01C 17/04

- • with north-seeking magnetic elements, e.g. needles

## U G01C 17/10

- • • Comparing observed direction with north indication

## G01C 17/12

- • • • by sighting means, e.g. for surveyors' compasses

## G01C 17/14

- • • • by reference marks, e.g. for ships' compasses

**U G01C 19/00**

**Gyroscopes; Turn-sensitive devices using vibrating masses; Turn-sensitive devices without moving masses; Measuring angular rate using gyroscopic effects**

## U G01C 19/02

- Rotary gyroscopes

## U G01C 19/34

- • for indicating a direction in the horizontal plane, e.g. directional gyroscopes

## G01C 19/38

- • • with north-seeking action by other than magnetic means, e.g. gyrocompasses using **earth's** rotation

**Project: RP0117 (G01C)****U G01C 22/00**

**Measuring distance traversed on the ground by vehicles, persons, animals, or other moving solid bodies, e.g. using odometers, using pedometers (counting mechanisms per se [G06M](#))**

## G01C 22/004

- {for golf carts (wheeled carriers for golf bags [A63B 55/08](#) [A63B 55/60](#))}

**Project: N/A (G01J)****U G01J 1/00**

**Photometry, e.g. photographic exposure meter (spectrophotometry [G01J 3/00](#); specially adapted for radiation pyrometry [G01J 5/00](#) {exposure meters built in cameras [G03B 17/06](#)})**



- U G01J 1/42
  - using electric radiation detectors (optical or mechanical part [G01J 1/04](#); by comparison with a reference light or electric value [G01J 1/10](#))
- U G01J 2001/4247
  - • {for testing lamps or other light sources}
- G01J 2001/4252
  - • • {for testing ~~LED`s~~[LED's](#)}

**Project: N/A (G01K)**

- U G01K 11/00
  - Measuring temperature based upon physical or chemical changes not covered by groups [G01K 3/00](#), [G01K 5/00](#), [G01K 7/00](#) or [G01K 9/00](#)
- G01K 11/28
  - using measurements of density {(measuring density in general [G01N 9/00](#))}

**Project: MP0123 (G01M)**

- G01M 11/00
  - Testing of optical apparatus; Testing structures by optical methods not otherwise provided for

**WARNING**

~~Groups [G01M 11/30](#) — [G01M 11/39](#) do not correspond to former or future IPC groups. Concordance CPC : IPC for these groups is as follows: [G01M 11/30](#) : [G01M 11/39](#) : [G01M 11/00](#)~~

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

- U G01N 21/00
  - Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible or ultra-violet light ([G01N 3/00](#)-[G01N 19/00](#) take precedence)

**NOTE**

This group does not cover the investigation of spectral properties of light per se, or measurements of the properties of materials where spectral properties of light are sensed and primary emphasis is placed on creating, detecting or analysing the spectrum providing that the properties of the materials to be investigated are of minor importance (see also Note (4) after the title of class [G01](#)). Those subjects are covered by group [G01J 3/00](#).

- U G01N 21/84
  - Systems specially adapted for particular applications
- U G01N 21/88
  - • Investigating the presence of flaws or contamination
- U G01N 21/95
  - • • characterised by the material or shape of the object to be examined ([G01N 21/89](#) to [G01N 21/91](#), [G01N 21/94](#) take precedence)
- U G01N 21/956
  - • • • Inspecting patterns on the surface of objects (contactless testing of electronic circuits [G01R 31/308](#); testing currency [G07D](#) {manufacturing processes per se of semiconductor devices implementing a measuring step [H01L 22/10](#)})
- G01N 2021/95638
  - • • • • {for ~~PCB`s~~[PCB's](#)}
- U G01N 33/00
  - Investigating or analysing materials by specific methods not covered by the preceding groups
- U G01N 33/48
  - biological material, e.g. blood, urine ([G01N 33/02](#) to [G01N 33/14](#), [G01N 33/26](#), [G01N 33/44](#), [G01N 33/46](#) take precedence; determining the germinating capacity of seeds [A01C 1/02](#)); Haemocytometers (counting blood corpuscles distributed over a surface by scanning the surface [G06M 11/02](#))

- U G01N 33/50
- • Chemical analysis of biological material, e.g. blood, urine; Testing involving biospecific ligand binding methods; Immunological testing (measuring or testing processes involving enzymes or micro-organisms, compositions or test papers therefor; processes for forming such compositions, condition responsive control in microbiological or enzymological processes [C12Q](#))
- NOTES**
1. The expression "involving", when used in relation to a material includes the testing for the material as well as employing the material as a determinant or reactant in a test for a different material.
  2. In groups [G01N 33/52](#) to [G01N 33/96](#), in the absence of an indication to the contrary, an invention is also classified in the last appropriate place.
  3. Documents relating to new peptides or new DNA or its corresponding mRNA, encoding for the peptides, and their use in measuring or testing processes are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes relating to their use in diagnostics. However, if the investigating or analysing aspects are of interest, the documents are classified in this group
- U G01N 33/68
- • • involving proteins, peptides or amino acids {(involving lipoproteins [G01N 33/92](#))}
- U G01N 33/6893
- • • • {related to diseases not provided for elsewhere}
- G01N 33/6896
- • • • • {Neurological disorders, e.g. ~~Alzheimer's~~[Alzheimer's](#) disease}
- U G01N 2201/00**
- Features of devices classified in [G01N 21/00](#)**
- U G01N 2201/06
- Illumination; Optics
- U G01N 2201/061
- • Sources
- U G01N 2201/06146
- • • Multisources for homogeneisation, as well sequential as simultaneous operation
- G01N 2201/06153
- • • • the sources being ~~LED's~~[LED's](#)
- G01N 2201/062
- • ~~LED's~~[LED's](#)
- G01N 2201/0626
- • • Use of several ~~LED's~~[LED's](#) for spatial resolution
- G01N 2201/0627
- • • Use of several ~~LED's~~[LED's](#) for spectral resolution
- U G01N 2333/00**
- Assays involving biological materials from specific organisms or of a specific nature**
- NOTE**
- In groups [G01N 2333/47](#) to [G01N 2333/994](#) indexing codes are assigned according to the chemical nature of the materials irrespective of the source organism.
- U G01N 2333/005
- from viruses
- U G01N 2333/01
- • DNA viruses
- U G01N 2333/03
- • • Herpetoviridae, e.g. pseudorabies virus
- G01N 2333/055
- • • • ~~Marek's~~[Marek's](#) disease virus
- U G01N 2333/435
- from animals; from humans
- U G01N 2333/46
- • from vertebrates
- U G01N 2333/4609
- • • from reptiles
- U G01N 2333/4613
- • • • Snake venom
- G01N 2333/4616
- • • • • from ~~Russell's~~[Russell's](#) viper

- U G01N 2333/90 · Enzymes; Proenzymes
- NOTE  
Enzymes are generally categorised below according to the "Nomenclature and Classification of Enzymes" of the International Commission on Enzymes. Where appropriate, this designation appears in the groups below in parenthesis.

- U G01N 2333/902 · · Oxidoreductases (1.)
- U G01N 2333/90245 · · · acting on paired donors with incorporation of molecular oxygen (1.14)
- U G01N 2333/90258 · · · · with a reduced iron-sulfur protein as one donor (1.14.15) in general
- U G01N 2333/90261 · · · · · with a definite EC number (1.14.15.-)
- G01N 2333/90267 · · · · · · **Cholesterol monooxygenase (cytochrome P 450scs)**(1.14.15.6)

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

- U G01R 1/00 **Details of instruments or arrangements of the types included in groups [G01R 5/00](#) to [G01R 13/00](#) and [G01R 31/00](#) (constructional details particular to {electromechanical} arrangements for measuring the electric consumption [G01R 11/02](#))**
- U G01R 1/02 · General constructional details (details of a kind applicable to measuring arrangements not specially adapted for a specific variable [G01D 7/00](#))
- U G01R 1/04 · · Housings; Supporting members; Arrangements of terminals ("burn-in" aspects [G01R 31/286](#); terminals [H01R](#); terminal strips or boards [H02B](#); housings for electrical apparatus [H05K](#))
- U G01R 1/0408 · · · {Test fixtures or contact fields; Connectors or connecting adaptors; Test clips; Test sockets ([G01R 1/067](#) takes precedence; mass production testing systems [G01R 31/01](#); testing of connections [G01R 31/04](#); for testing printed circuit boards [G01R 31/2808](#))}
- G01R 1/0425 · · · · {Test clips, e.g. for **IC's/IC's**}
- G01R 1/0433 · · · · {Sockets for **IC's/IC's** or transistors}
- G01R 1/0475 · · · · · {for TAB **IC's/IC's**}
- G01R 1/0483 · · · · · {Sockets for un-leaded **IC's/IC's** having matrix type contact fields, e.g. BGA or PGA devices; Sockets for unpackaged, naked chips (~~for **IC's** with connecting points around the edges only~~ [G01R 1/0433](#)~~for **IC's** with connecting points around the edges only~~ [G01R 1/0433](#))}
- U G01R 1/06 · · Measuring leads; Measuring probes ([G01R 19/145](#), [G01R 19/165](#) take precedence; end pieces for leads [H01R 11/00](#))
- G01R 1/067 · · · Measuring probes {(plugs, sockets or clips [G01R 1/0408](#); testing of connections [G01R 31/04](#); ~~contacting **IC's** for test purposes when probe design is not the essential feature~~ [G01R 31/2886](#); ~~contacting **IC's** for test purposes when probe design is not the essential feature~~ [G01R 31/2886](#); using radiation beam as probe [G01R 31/302](#); end pieces for wires terminating in a probe [H01R 11/18](#))}
- U G01R 1/073 · · · · Multiple probes {([G01R 1/06783](#), [G01R 1/06794](#), [G01R 1/071](#), [G01R 1/072](#) take precedence)}
- U G01R 1/07307 · · · · · {with individual probe elements, e.g. needles, cantilever beams or bump contacts, fixed in relation to each other, e.g. bed of nails fixture or probe card}
- U G01R 1/07314 · · · · · · {the body of the probe being perpendicular to test object, e.g. bed of nails or probe with bump contacts on a rigid support (on an elastic support, e.g. a film, [G01R 1/0735](#))}
- U G01R 1/07328 · · · · · · · {for testing printed circuit boards}

- G01R 1/07335 . . . . . {for double-sided contacting or for testing boards with surface-mounted devices (~~SMD's~~~~SMD's~~)}
- G01R 1/18 . . Screening arrangements against electric or magnetic fields, e.g. against ~~earth's~~~~earth's~~ field {(measuring shielding efficiency [H05K 9/0069](#))}
- U G01R 13/00 Arrangements for displaying electric variables or waveforms (display by mechanical displacement only [G01R 5/00](#), [G01R 7/00](#), [G01R 9/00](#); recording frequency spectrum [G01R 23/18](#))**
- G01R 13/02 . for displaying measured electric variables in digital form (~~using LCD's or LED's~~ [G01R 13/40](#)); ~~{using LCD's or LED's~~ [G01R 13/40](#); counters [G06M](#); analogue/digital conversion in general [H03M 1/00](#))
- G01R 13/20 . Cathode-ray oscilloscopes; {Oscilloscopes using other screens than ~~CRT's~~~~CRT's~~, e.g. ~~LCD's~~~~LCD's~~; (control arrangements or circuits for cathode-ray tube indicators [G09G 1/00](#); cathode ray tubes [H01J 31/00](#))}
- U G01R 19/00 Arrangements for measuring currents or voltages or for indicating presence or sign thereof ([G01R 5/00](#) takes precedence; {voltage measurements using secondary electron emission when testing electronic circuits [G01R 31/305](#)}; for measuring bio-electric currents or voltages [A61B 5/04](#))**
- NOTE**  
Within groups [G01R 19/02](#) to [G01R 19/32](#), group [G01R 19/28](#) takes precedence. Groups [G01R 19/18](#) to [G01R 19/257](#) take precedence over groups [G01R 19/02](#) to [G01R 19/17](#) and [G01R 19/30](#).
- U G01R 19/165 . Indicating that current or voltage is either above or below a predetermined value or within or outside a predetermined range of values (circuits with regenerative action, e.g. Schmitt trigger [H03K 3/00](#); threshold switches [H03K 17/00](#))
- U G01R 19/16504 . . {characterised by the components employed (contains no documents)}
- G01R 19/16519 . . . {using ~~FET's~~~~FET's~~}
- U G01R 19/25 . using digital measurement techniques (arrangements for displaying measured electric variables in digital form [G01R 13/02](#) {Analogue/digital conversion [H03M](#)})
- G01R 19/2503 . . {for measuring voltage only, e.g. digital volt meters (~~DVM's~~~~DVM's~~) ([G01R 19/2506](#) to [G01R 19/257](#) take precedence)}
- G01R 19/2516 . . {Modular arrangements for computer based systems; using personal computers (~~PC's~~~~PC's~~), e.g. "virtual instruments"}
- U G01R 31/00 Arrangements for testing electric properties; Arrangements for locating electric faults; Arrangements for electrical testing characterised by what is being tested not provided for elsewhere (measuring leads, measuring probes [G01R 1/06](#); {measuring superconductive properties [G01R 33/1238](#)}; indicating electrical condition of switchgear or protective devices [H01H 71/04](#), [H01H 73/12](#), [H02B 11/10](#), [H02H 3/04](#); testing or measuring semiconductors or solid state devices during manufacture [H01L 22/00](#); testing substation equipment, e.g. mobile phones [H04M 1/24](#); testing or monitoring of control systems [G05B 23/02](#); {testing or monitoring transmitters or receivers [H04B 17/00](#)})**
- U G01R 31/02 . Testing of electric apparatus, lines or components, for short-circuits, discontinuities, leakage {of current}, or incorrect line connection {([G01R 31/001](#), [G01R 31/005](#), [G01R 31/01](#), [G01R 31/08](#), [G01R 31/12](#), [G01R 31/24](#), [G01R 31/26](#), [G01R 31/28](#), [G01R 31/327](#), [G01R 31/34](#), [G01R 31/36](#), [G01R 31/40](#), [G01R 31/44](#) take precedence; measuring electromagnetic field leakage [G01R 29/0821](#); testing of sparking plugs [H01T 13/58](#))}

- U G01R 31/04
  - • Testing connections, e.g. of plugs, of non-disconnectable joints  
{([G01R 31/31717](#) takes precedence; testing of connections in integrated circuits, chip-to-lead connections, bond wires [G01R 31/2853](#))}
- G01R 31/046
  - • • {of connections between components and printed circuit boards  
(~~PCB's~~ [PCB's](#)) ([G01R 31/043](#) takes precedence)}
- 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](#); [testing LAN's](#) [H04L 12/2697](#)})
- U 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](#))
- U G01R 31/2607
  - • {Circuits therefor ([G01R 31/2642](#) takes precedence)}
- G01R 31/2621
  - • • {for testing field effect transistors, i.e. ~~FET's~~ [FET's](#)}
- U G01R 31/28
  - Testing of electronic circuits, e.g. by signal tracer ({EMC, EMP or similar testing of electronic circuits [G01R 31/002](#)}; testing for short-circuits, discontinuities, leakage or incorrect line connection [G01R 31/02](#); checking computers {or computer components} [G06F 11/00](#); checking static stores for correct operation [G11C 29/00](#); {testing receivers or transmitters of transmission systems [H04B 17/00](#)})
- U G01R 31/282
  - • {Testing of electronic circuits specially adapted for particular applications not provided for elsewhere ([G01R 31/2801](#) and [G01R 31/2851](#) take precedence)}

**NOTE**

References listed below indicate CPC places which could also be of interest when carrying out a search in respect of the subject matter covered by the preceding group:

  - testing of individual LEDs [G01R 31/2635](#)
  - testing of lamps [G01R 31/44](#)
  - testing of displays and display drivers, e.g. LCDs [G09G 3/006](#)
  - testing of ADCs or DACs [H03M 1/1071](#)
- G01R 31/2825
  - • • {in household appliances or professional audio/video equipment (testing loudspeakers [H04R 29/00](#), testing ~~LAN's~~ [LAN's](#) [H04L 12/2697](#); testing TV systems [H04N 17/00](#))}
- G01R 31/3167
  - • Testing of combined analog and digital circuits ({~~testing ADC's~~ [H03M 1/1071](#) [testing ADC's](#) [H03M 1/1071](#)})
- U G01R 31/317
  - • Testing of digital circuits

**WARNING**

The following subgroups of [G01R 31/317](#) are not complete due to an ongoing reorganisation : [G01R 31/31702](#), [G01R 31/31708](#), [G01R 31/31711](#), [G01R 31/31717](#), [G01R 31/31718](#), [G01R 31/31728](#), [G01R 31/31901](#). See also [G01R 31/317](#) and its other subgroups
- U G01R 31/3181
  - • • Functional testing ([G01R 31/3177](#) takes precedence)
- U G01R 31/3185
  - • • • Reconfiguring for testing, e.g. LSSD, partitioning
- G01R 31/318505
  - • • • • {Test of Modular systems, e.g. Wafers, ~~MCM's~~ [MCM's](#)}
- G01R 31/318522
  - • • • • {Test of Sequential circuits (test of microprocessors [G06F 11/2236](#), test of ~~ALU's~~ [ALU's](#) [G06F 11/2226](#))}
- U **G01R 33/00**

**Arrangements or instruments for measuring magnetic variables**
- G01R 33/0058
  - {using bistable elements, e.g. Reed switches}

- G01R 33/02
- Measuring direction or magnitude of magnetic fields or magnetic flux ([G01R 33/20](#) takes precedence ; measuring direction or magnitude of the ~~earth's~~~~earth's~~ field for navigation or surveying [G01C](#); for prospecting, for measuring the magnetic field of the earth [G01V 3/00](#))
- NOTE
- Groups [G01R 33/022](#), [G01R 33/10](#) take precedence over groups [G01R 33/025](#) to [G01R 33/09](#).
- U G01R 33/20
- involving magnetic resonance (medical aspects [A61B 5/055](#); magnetic resonance gyrometers [G01C 19/00](#) {investigating materials using NMR [G01N 24/00](#); prospecting or detecting using NMR [G01V 3/00](#)})
- U G01R 33/44
- • using nuclear magnetic resonance [NMR] ([G01R 33/24](#), [G01R 33/62](#) take precedence)
- WARNING
- Groups **G01R33/44B** - [G01R 33/443](#) are not complete pending reclassification. See also this group
- U G01R 33/48
- • • NMR imaging systems
- U G01R 33/54
- • • • Signal processing systems, e.g. using pulse sequences, {Generation or control of pulse sequences (in general [H03K](#)); Operator Console}
- U G01R 33/56
- • • • • Image enhancement or correction, e.g. subtraction or averaging techniques, {e.g. improvement of signal-to-noise ratio and resolution (image data processing in general [G06T](#))}
- U G01R 33/563
- • • • • • of moving material, e.g. flow contrast angiography
- U G01R 33/56308
- • • • • • • {Characterization of motion or flow; Dynamic imaging}
- G01R 33/56325
- • • • • • • • {Cine imaging}

**Project: N/A (G01V)****G01V**

**G01V** **GEOPHYSICS; GRAVITATIONAL MEASUREMENTS; DETECTING MASSES OR OBJECTS** (detecting or locating foreign bodies for diagnostic, surgical or person-identification purposes [A61B](#); means for indicating the location of accidentally buried, e.g. snow-buried persons [A63B 29/02](#); investigating or analysing earth materials by determining their chemical or physical properties [G01N](#); measuring electric or magnetic variables in general, other than direction or magnitude of the ~~earth's~~~~earth's~~ field [G01R](#); electronic or nuclear magnetic resonance arrangements [G01R 33/20](#); radar, sonar or analogous methods in general, detecting masses or objects involving these methods [G01S](#))

NOTES

1. In this subclass, the geophysical methods apply both to the earth and to other celestial objects, e.g. planets.
2. Attention is drawn to the Notes following the title of class [G01](#).

WARNING

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

[G01V 3/11](#) covered by [G01V 3/101](#), [G01V 3/104](#)



**Project: MP0123 (G01V)****M G01V 1/00****Seismology; Seismic or acoustic prospecting or detecting**NOTE

Groups [G01V 1/44](#) to [G01V 1/52](#) take precedence over groups [G01V 1/001](#) to [G01V 1/393](#) [G01V 1/42](#)

WARNING

Group [G01V 1/159](#) does not correspond to former or current IPC groups:  
Concordance ECLA:IPC for this group is as follows: - [G01V 1/159](#) : [G01V 1/02](#)

**Project: N/A (G02B)****U G02B 1/00****Optical elements characterised by the material of which they are made (compositions of optical glasses [C03C 3/00](#); cements for glass [C03C 27/00](#))**

U G02B 1/10

- Optical coatings produced by application to, or surface treatment of, optical elements ([G02B 1/08](#) takes precedence)

G02B 1/105  
(Frozen)

- {Protective coatings}

WARNING

Group [G02B 1/105](#) is no longer used for the classification of documents as of January 15, 2015. The backfile of this group is being reclassified into groups [G02B 1/14](#), ~~[G02B 1/16](#)~~[G02B 1/16](#) - [G02B 1/18](#).

Until reclassification is complete, groups [G02B 1/105](#) and [G02B 1/14](#) - [G02B 1/18](#) should be considered in order to perform a complete search.

**U G02B 5/00****Optical elements other than lenses (light guides [G02B 6/00](#); optical logic elements [G02F 3/00](#))**

U G02B 5/30

- Polarising elements (light-modulating devices [G02F 1/00](#))

U G02B 5/3025

- {Polarisers, i.e. arrangements capable of producing a definite output polarisation state from an unpolarised input state ([G02B 5/3008](#), [G02B 5/3016](#) take precedence)}

G02B 5/3066

- {involving the reflection of light at a particular angle of incidence, e.g. ~~Brewster's~~[Brewster's](#) angle}

**Project: MP0117 (G02B)****U G02B 6/00****Light guides**

U G02B 6/10

- of the optical waveguide type ([G02B 6/02](#), [G02B 6/24](#) take precedence; devices or arrangements for the control of light by electric, magnetic, electro-magnetic or acoustic means [G02F 1/00](#); transferring the modulation of modulated light [G02F 2/00](#); optical logic elements [G02F 3/00](#); optical analogue/digital converters [G02F 7/00](#); stores using opto-electronic devices [G11C 11/42](#), {using electro-optical elements [G11C 13/047](#)} ; electric waveguides [H01P](#); transmission of information by optical means [H04B 10/00](#); multiplex systems [H04J 14/00](#))

U G02B 6/12

- of the integrated circuit kind (production or processing of single crystals [C30B](#); electric integrated circuits [H01L 27/00](#) {coupling fibres and integrated optical circuits [G02B 6/30](#)})

U G02B 6/13

- Integrated optical circuits characterised by the manufacturing method

G02B 6/131

- by using epitaxial growth (epitaxial growth for semiconductors ~~[H01L 21/36](#)~~[H01L 21/02365](#))



**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](#))**
- U G02B 27/22 • for producing stereoscopic or other three dimensional effects (in microscopes [G02B 21/22](#); viewing apparatus [G02B 27/02](#); stereoscopic television [H04N 13/00](#))
- G02B 27/2228 • {Stereoscopes or similar systems based on providing first and second images situated at first and second locations, said images corresponding to parallaxically displaced views of the same object, and presenting the first and second images to an ~~observer's~~[observer's](#) left and right eyes respectively ([G02B 27/2207](#), [G02B 27/2264](#), [G02B 27/26](#) take precedence)}

**Project: MP0123 (G02F)**

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

**NOTE**

This group covers only :

- devices or arrangements, e.g. cells, the optical operation of which is modified by changing the optical properties of the medium of the devices or arrangements by the influence or control of physical parameters, e.g. electric fields, electric current, magnetic fields, sound or mechanical vibrations, stress or thermal effects;
  - devices or arrangements in which the electric or magnetic field component of the light beams influences the optical properties of the medium, i.e. non-linear optics;
  - control of light by electromagnetic waves, e.g. radio waves, or by electrons or other elementary particles.
- U G02F 1/01 • for the control of the intensity, phase, polarisation or colour ([G02F 1/29](#), [G02F 1/35](#) take precedence; polarising elements per se [G02B 5/30](#); static storage per se [G11C](#); image tube screens acting as light valves by shutter operation [H01J 29/12](#); such screens acting by discoloration [H01J 29/14](#); {projection arrangements for television image reproduction, e.g. using eidophor [H04N 5/74](#); recording by light [G11B 7/00](#) to [G11B 11/00](#)})
- U G02F 1/13 • • based on liquid crystals, e.g. single liquid crystal display cells (liquid crystal materials [C09K 19/00](#))
- U G02F 1/133 • • • Constructional arrangements; Operation of liquid crystal cells; Circuit arrangements (arrangements or circuits for control of liquid crystal elements in a {segment display or a} matrix, not structurally associated with these elements, {respectively [G09G 3/18](#) and } [G09G 3/36](#))
- U G02F 1/1333 • • • • Constructional arrangements; {Manufacturing methods}{[G02F 1/135](#), [G02F 1/136](#) take precedence)

- U G02F 1/1335      • • • • Structural association of optical devices, e.g. polarisers, reflectors or illuminating devices, with the cell
- M G02F 1/1336      • • • • • {Illuminating devices (in general [F21V](#); associated with display devices for electronic watches [G04G 9/0041](#))}

**WARNING**

Groups G02F 1/1336 – G02F 1/133621 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: – G02F 1/1336 – G02F 1/133621 : G02F 1/13357

**Project: N/A (G03B)**

- U G03B 33/00      **Colour photography, other than mere exposure or projection of a colour film (printing apparatus [G03B 27/00](#); stereoscopic colour photography [G03B 35/00](#))**
- G03B 33/10      • Simultaneous recording or projection ([G03B 33/02](#), [G03B 33/04](#) [G03B 33/06](#) take precedence)

**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 1/02      • {by photographic processes for production of originals simulating relief}
- G03F 1/04      • {by montage processes}
- G03F 1/10      • {by exposing and washing out pigmented or coloured organic layers; by colouring macromolecular patterns}
- G03F 1/12      • {by exposing silver-halide-containing photosensitive materials or diazo-type materials}
- G03F 1/14      • {Originals characterised by structural details, e.g. supports, cover layers, pellicle rings}
- G03F 1/16      • {Originals having apertures, e.g. for corpuscular lithography}

**WARNING**

Groups [G03F 1/20-G03F 1/92](#) are incomplete pending reclassification of documents from groups [G03F 1/0007-G03F 1/16](#). 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.

- U G03F 7/00** Photomechanical, e.g. photolithographic, production of textured or patterned surfaces, e.g. printing surfaces; Materials therefor, e.g. comprising photoresists; Apparatus specially adapted therefor (using photoresist structures for special production processes, see the relevant places, e.g. [B44C](#), [H01L](#), e.g. [H01L 21/00](#), [H05K](#))
- U G03F 7/004 · Photosensitive materials ([G03F 7/12](#), [G03F 7/14](#) take precedence)
- U G03F 7/022 · · Quinonediazides ([G03F 7/075](#) takes precedence)
- G03F 7/0223 · · · {Iminoquinonediazides; Para-quinonediazides}

**Project: MP0124 (G03G)**

- U G03G 15/00** Apparatus for electrographic processes using a charge pattern ([G03G 16/00](#), [G03G 17/00](#) take precedence; {xerographic printers for data processors per se [G06K 15/14](#)})
- U G03G 15/50 · {Machine control of apparatus for electrographic processes using a charge pattern, e.g. regulating different parts of the machine, multimode copiers, microprocessor control (sequencing control [G03G 21/14](#))}
- M G03G 15/5004 · · {Power supply control, e.g. power-saving mode, automatic power ~~turn~~turn-off}

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

- U G03G 2215/00** Apparatus for electrophotographic processes (not used)
- U G03G 2215/00172 · relative to the original handling
- U G03G 2215/00177 · · for scanning
- G03G 2215/00181 · · · concerning the ~~original's~~original's state of motion (not used)
- U G03G 2215/20 · Details of the fixing device or process

**NOTE**

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

+H Using heat to fix  
 +P Using pressure to fix  
 +Pl where the pressure is changed  
 +PlA being adapted to the current toner-carrying medium treated (e.g. duplex copy, colour copy, OHP sheet, envelope)  
 +PlB compensating for temperature or other technical condition variations (e.g. sheet skewing) occurring  
 +PlC when being in a non-fixing or waiting mode  
 +PlM for maintenance purpose or abnormal situations (e.g. power cut-off)

- U G03G 2215/207 · · Type of toner image to be fixed (not used)
- U G03G 2215/2074 · · · colour
- G03G 2215/2077 · · · · Fixing between separate colour toner transfers]

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

- U G04B 19/00** Indicating the time by visual means ({indicating the time optically by electric means [G04C 17/00](#), e.g.} by electric lamps [G04C 17/02](#); display arrangements in general [G09F](#))
- U G04B 19/06** • Dials ({moving discs [G04B 19/20](#); illuminated dials or hands [G04B 19/30](#);} for time-pieces without clockwork [G04B 49/04](#); {machines and arrangements for the manufacture of dials or hands [G04D 3/0048](#)})
- U G04B 19/10** • • Ornamental shape of the graduations or the surface of the dial; Attachment of the graduations to the dial {(cases for special purposes, e.g. ring or button watches [G04B 37/12](#); indicating means with special effects [G04B 45/00](#))}  
**G04B 19/106** • • • {Special number markings}

**Project: MP0124 (G04B)**

- U G04B 21/00** Indicating the time by acoustic means (at preselected times [G04B 23/00](#); by electro-acoustic means [G04C 21/04](#); {indicating the time by means other than acoustically, or by combined means [G04B 25/00](#); indicating the time by visual means [G04B 19/00](#), [G04C 17/00](#); acoustic signalling arrangements [G08B 3/00](#)})
- M G04B 21/02** • Regular striking mechanisms giving the full hour, half hour; or quarter hour {(electrically operating striking mechanisms-with-choice-of-repertoire [mechanism G04C 21/06](#))}  
[G04C 21/06](#)}

**Project: N/A (G04C)**

- U G04C 9/00** Electrically-actuated devices for setting the time-indicating means (of slave clocks [G04C 13/03](#); mechanical setting devices [G04B 27/00](#); radio-controlled time-pieces [G04R](#))
- G04C 9/02** • {brought into action by radio transmission}
- WARNING  
 This group is no longer used for the classification of new documents as from September 1, 2012 The backlog of this group is being continuously reclassified to subgroups of [G04R](#)

**Project: N/A (G04D)**

- U G04D 1/00** Gripping, holding, or supporting devices {(stands in general [F16M](#); for instruments [G01D 11/30](#), [B01L](#))}  
**G04D 1/04** • Tools for setting springs
- G04D 3/00** Watchmakers or watch-repairers machines or tools for working materials {(metal working in general class [B23](#))}  
[B23](#)}

**Project: N/A (G04G)**

- U G04G 7/00** Synchronisation (radio-controlled time-pieces [G04R](#))  
**G04G 7/02** • {by radio}
- WARNING  
 This group and subgroups are no longer used for the classification of new documents as from September 1, 2012. The backlog of this group and subgroups are being continuously reclassified to subgroups of [G04R](#)

**Project: N/A (G05B)**

- U G05B 19/00 Programme-control systems (specific applications see the relevant places, e.g. [A47L 15/46](#); clocks with attached or built-in means operating any device at a preselected time interval [G04C 23/00](#); marking or sensing record carriers with digital information [G06K](#); information storage [G11](#); time or time-programme switches which automatically terminate their operation after the programme is completed [H01H 43/00](#))
- U G05B 19/02 • electric
- U G05B 19/04 • • Programme control other than numerical control, i.e. in sequence controllers or logic controllers ([G05B 19/418](#) takes precedence; numerical control [G05B 19/18](#))
- U G05B 19/05 • • • Programmable logic controllers, e.g. simulating logic interconnections of signals according to ladder diagrams or function charts
- G05B 19/052 • • • {Linking several **PLC's** **PLC's**}
- U G05B 19/418 • • Total factory control, i.e. centrally controlling a plurality of machines, e.g. direct or distributed numerical control [DNC], flexible manufacturing systems [FMS], integrated manufacturing systems [IMS], computer integrated manufacturing [CIM]
- U G05B 19/4189 • • • {characterised by the transport system}
- G05B 19/41895 • • • • {using automatic guided vehicles [AGV] (control of position or course of **AGV's** **AGV's** [G05D 1/00](#))}

**Project: N/A (G05D)****G05D**

**SYSTEMS FOR CONTROLLING OR REGULATING NON-ELECTRIC VARIABLES** (for continuous casting of metals [B22D 11/16](#) ; valves per se [F16K](#); sensing non-electric variables, see the relevant subclasses of [G01](#); for regulating electric or magnetic variables [G05F](#))

**NOTES**

1. This subclass does not cover features of general applicability to regulating systems, e.g. anti-hunting arrangements, which are covered by subclass [G05B](#).
2. In this subclass, the following term is used with the meaning indicated:
  - "systems" includes self-contained devices such as speed governors, pressure regulators.
3. Control systems specially adapted for particular apparatus, machines or processes are classified in the subclasses for the apparatus, machines or processes, provided that there is specific provision for control or regulation relevant to the special adaptation, either at a detailed level, (e.g. [A21B 1/40](#) : "for regulating temperature in bakers' ovens") or at a general level, (e.g. [B23K 9/095](#) : "for automatic control of welding parameters in arc welding"). Otherwise, classification is made in the most appropriate place in this subclass. The following are lists of places where there is specific provision of the kind referred to above. Where such provision is at a detailed level, the places have been grouped according to the main groups of this subclass. Where the provision is at a general level (e.g. of a kind appropriate to more than one of the main groups specified in the lists, or to main groups [G05D 27/00](#) or [G05D 29/00](#) ), the places are listed under the title "General References". Places related to [G05D 1/00](#)

<a href="#">A01B 69/00</a>	Agricultural machines or implements
<a href="#">A63H 17/36</a>	Toy vehicles
<a href="#">B60V 1/11</a>	Air-cushion vehicles
<a href="#">B62D 1/00</a>	Steering controls of motor vehicles or trailers,
	i.e. means for initiating a change of direction

[B62D 6/00](#) Arrangements for automatically controlling the steering depending on driving conditions

[B62D 55/116](#) Chassis of endless-tracked vehicles

[B63H 25/00](#) Marine steering; control of waterborne vessels

[B64C 13/00](#) to [B64C 15/00](#) Controlling aircraft

[B64D 25/10](#) Controlling attitude or direction of aircraft ejector seats

[B64G 1/24](#) Cosmonautic vehicles

[F41G 7/00](#) Self-propelled missiles

[F42B 15/01](#) Guided missiles

[F42B 19/01](#) Marine torpedoes Places related to [G05D 3/00](#)

[A43D 119/00](#) Footwear manufacture

[B21K 31/00](#) Tool carriers in forging or pressing

[B23B 39/26](#) Pattern-controlled boring or drilling tools

[B23D 1/30](#) , [B23D 3/06](#) , [B23D 5/04](#) Planing or slotting machines controlled by copying device

[B23H 7/18](#) Electrode to workpiece spacing in electric dischargte and electrochemical machining

[B23K 26/02](#) Workpiece in laser welding or cutting

[B23K 37/04](#) Workpiece in welding

[B23K 37/06](#) Molten metal in welding

[B23Q 5/20](#) Spindles in machine tools

[B23Q 15/00](#) , [B23Q 16/00](#) Tool or work position in machine tools

[B23Q 35/00](#) Tools controlled by pattern or master model

[B24B 17/00](#) Grinding controlled by patterns, drawings, magnetic tape or the like

[B24B 47/22](#) Starting position in grinding

[B30B 15/24](#) Actuating members in presses

[B62D 55/116](#) Chassis of tracked vehicles

[B65H 23/18](#) Web-advancing mechanisms

[E02F 3/43](#) Dippers or buckets in dredgers

[F15B 9/00](#) Fluid-pressure servomotors with follow-up action

[F24J 2/38](#) Tracking of solar haet collectors

[G03F 9/00](#) Photomechanical production of patterned or textured surfaces

[G11B 5/588](#) Rotating heads in information storage systems

[G21C 7/12](#) Movement of control elements in nuclear reactors

Places related to [G05D 5/00](#)

[A24B 7/14](#) Tobacco cutting

[B05C 11/02](#) Thickness of coating of fluent material on surface

[B21B 37/16](#) Thickness, width, diameter or other

transverse dimensions of the products of  
metal-rolling mills  
[C03B 18/04](#) Dimension of glass ribbon  
[D21F 7/06](#) Thickness of layer in paper making  
Places related to [G05D 7/00](#)  
[A45D 20/26](#) Air in hair drying helmets  
[A61M 5/168](#) Flow of media to the human body  
[B03C 3/36](#) Gases or vapour in electrostatic  
separators  
[B05C 11/10](#) Fluent material in coating devices  
[B67D 1/12](#) Dispensing beverages on draught  
[B67D 7/28](#) Transferring liquids  
[C10K 1/28](#) Gas purifiers  
[E21B 21/08](#) Flushing boreholes  
[E21B 43/12](#) Obtaining liquids from wells  
[F01D 17/00](#) Flow in non-positive-displacement  
machines  
or systems  
[F01M 1/16](#) Lubrication arrangements  
[F01P 7/00](#) Coolant flow in cooling devices  
[F02C 9/16](#) ,  
[F02C 9/50](#) Gas-turbine working fluid  
[F16L 55/027](#) Throttle passages in pipes  
[F24F 11/00](#) Air-flow or supply of heating or  
cooling  
fluids in air treatment arrangements  
[F26B 21/12](#) Air or gas flow in dryers  
[G01G 11/08](#) Continuous flow weighing apparatus  
[G21D 3/14](#) Coolant in nuclear power plant  
Places related to [G05D 9/00](#)  
[B01D 21/34](#) Liquid level in sedimentation  
arrangements  
[B41L 27/04](#) Ink level in printing, manifolding  
or  
duplicating arrangements  
[F22D 5/00](#) Feed water for boilers  
[H01J 1/10](#) , [H01J 13/14](#) Liquid pool  
electrodes in electric discharge  
tubes or lamps Places related to  
[G05D 11/00](#)  
[B01D 21/32](#) Density in sedimentation  
arrangements  
[B01F 15/04](#) Mixers  
[B24C 7/00](#) Abrasive blasts  
[B28C 7/00](#) Mixtures of clays or cements  
[B65G 53/66](#) Bulk material conveyers  
[F02K 3/075](#) Flow ratio in jet-propulsion plants  
Places related to [G05D 13/00](#)  
[B21C 1/12](#) Drum speed in metal drawing  
[B23Q 15/00](#) Cutting velocity of tool or work  
[B30B 15/20](#) Ram speed in presses  
[B60K 31/00](#) Setting or limiting speed of  
vehicles  
[B60L 15/00](#) Electrically-propelled vehicles  
[B64D 31/08](#) Cruising speed of aircraft  
[D01D 1/09](#) Feed rate in manufacture of  
artificial  
filaments, threads, fibres, bristles or  
ribbons  
[D01G 15/36](#) Carding machines  
[D02H 13/14](#) Warping, beaming or leasing machines



[D03D 51/16](#)                      Cyclically varying speed of looms  
[G01N 30/32](#)                      Speed of fluid carrier in chemical  
analysis  
[G11B 15/46](#)                      Filamentary or web record carriers or  
heads  
for such carriers in information storage  
systems  
[G11B 19/28](#)                      Non-filamentary, non-web record carriers,  
or  
heads for such carriers in information storage  
systems                              Places related to  
[G05D 15/00](#)  
[B25D 9/26](#)                      Portable percussive tools  
[B30B 15/22](#)                      Ram pressure in presses  
[B65H 59/00](#)                      Tension in filamentary material  
{[B65H 23/00](#)                      ,                      [B65H 59/00](#)}                      Tension in  
webs, tapes, filamentary material  
[B66D 1/50](#)                      Rope, cable or chain tension  
[D03D 49/04](#)                      Tension in looms  
[D05B 47/04](#)                      Tension in sewing machines  
[D21F 3/06](#)                      Pressure in paper-making machines  
[F26B 13/12](#)                      Drying fabrics  
[F26B 21/10](#)                      Pressure in dryers  
[G11B 15/43](#)                      Record carrier tension in  
information  
storage arrangements                      Places related to  
[G05D 16/00](#)  
[B60C 23/00](#)                      Tyre pressure  
[B63C 11/08](#)                      Air within diving suit  
[B64D 13/00](#)                      Aircraft air-pressure  
[B65G 53/66](#)                      Bulk material conveyers  
[D01D 1/09](#)                      Manufacture of artificial filaments,  
threads,  
fibres, bristles or ribbons  
[E21B 21/08](#)                      Flushing boreholes  
[F01M 1/16](#)                      Lubrication arrangements  
[G01N 30/32](#)                      Pressure of fluid carrier in chemical  
analysis  
[H01J 7/14](#)                      Pressure in electric discharge tubes or  
lamps  
[H01K 1/52](#)                      Pressure in electric incandescent lamps  
Places related to                      [G05D 19/00](#)  
[B25D 9/26](#)                      Portable percussion tools  
[B65G 27/32](#)                      Jigging conveyers                      Places  
related to                      [G05D 21/00](#)  
[B01D 21/32](#)                      Density in sedimentation  
arrangements  
[B01D 53/30](#)                      Treating gases or vapours  
[G01N 30/34](#)                      Composition of fluid carrier in  
chemical  
analysis  
  
Places related to                      [G05D 22/00](#)  
[A01G 25/16](#)                      Watering gardens, fields, sports  
grounds  
or the like  
[A01K 41/04](#)                      Poultry incubators  
[A24B 9/00](#)                      Tobacco products  
[F24F 11/00](#)                      Air conditioning  
[F26B 21/08](#)                      Dryers                      Places related to  
[G05D 23/00](#)

<a href="#">A21B 1/40</a>	Bakers' ovens
<a href="#">A45D 6/20</a>	Hair curlers
<a href="#">B21C 31/00</a>	Metal extruding
<a href="#">B60C 23/00</a>	Tyre temperature
<a href="#">B64G 1/50</a>	Cosmonautic vehicles
<a href="#">C03B 18/18</a>	,
<a href="#">C03B 18/22</a>	Float baths in glass making
<a href="#">D01D 1/09</a>	Manufacture of artificial filaments, threads, fibres, bristles or ribbons
<a href="#">D04B 35/30</a>	Knitting machines
<a href="#">D06F 75/26</a>	Hand irons
<a href="#">D21F 5/06</a>	Paper-making machines
<a href="#">F01M 5/00</a>	Lubricant in lubrication arrangements
<a href="#">F16N 7/08</a>	Arrangements for supplying oil or unspecified lubricant from a reservoir
<a href="#">F22G 5/00</a>	Steam superheat
<a href="#">F26B 21/10</a>	Dryers
<a href="#">G01N 30/30</a>	Temperature of fluid carrier in chemical analysis
<a href="#">H01M 10/60</a>	Electric storage cells
<a href="#">H05B 6/06</a>	,
<a href="#">H05B 6/50</a>	,
<a href="#">H05B 6/68</a>	Dielectric, induction or microwave heating
<a href="#">H05G 1/36</a>	Anode of X-ray tube
related to	<a href="#">G05D 25/00</a>
<a href="#">B41B 21/08</a>	Photographic composing machines
<a href="#">H01S 3/10</a>	,
<a href="#">H05B 33/08</a>	,
<a href="#">H05B 35/00</a>	to
<a href="#">H05B 43/00</a>	Lasers and other light sources
General references	
<a href="#">A01J 5/007</a>	Milking machines
<a href="#">B23K 9/095</a>	Welding parameters
<a href="#">B23Q 35/00</a>	Copying
<a href="#">B24B 17/00</a>	,
<a href="#">B24B 49/00</a>	Grinding or polishing
<a href="#">B24C 7/00</a>	Abrasive blasts
<a href="#">B67D 1/12</a>	Dispensing beverages on draught
<a href="#">G03G 21/20</a>	Electrographic, electrophotographic or magnetographic processes
<a href="#">H02P 5/00</a>	to
<a href="#">H02P 9/00</a>	Dynamo-electric motors or generators

## Project: N/A (G05G)

### U G05G 5/00

Means for preventing, limiting or returning the movements of parts of a control mechanism, e.g. locking controlling member ([G05G 17/00](#) takes precedence)

#### G05G 5/03

- Means for enhancing the ~~operator's~~ *operator's* awareness of arrival of the controlling member at a command or datum position; Providing feel, e.g. means for creating a counterforce (arrangements for indicating the position of the controlling member [G05G 1/015](#))

**Project: N/A (G06)****G06**

**COMPUTING; CALCULATING; COUNTING (score computers for games [A63B 71/06](#), [A63D 15/20](#), [A63F 1/18](#); combinations of writing implements with computing devices [B43K 29/08](#))**

NOTE

Attention is drawn to the notes (particularly the definition of the term "variable") on page [G3] of the Int.Cl. In this class:

- The term "data" is understood to be synonymous with "information", and the term "information" is therefore not used in [G06C](#);
- The terms "calculating" and "computing" are both understood to include, inter alia, operations on numerical values and on data expressed in numerical form; of these words "computing" is used throughout the class. "Computation" is derived from this interpretation of "computing". In the French language the word "calcul" will serve for either word;
- In those subclasses which include simulators:
  - a simulator in [G06](#) is concerned with the mathematics of computing the existing or anticipated conditions within the real device or system;
  - Control functions derived from simulators are not in [G06](#) but are generally in [G05](#), although they may be in the subclass for the device controlled;
  - measurement of an individual variable to serve as an input to a simulator is in [G01](#)-{ 21E; 42; 119}
  - a simulator is regarded as a teaching or training device proper to [G09](#) if the simulator gives perceptible sensations having a likeness to the sensations the student would experience in reality in response to actions taken by him. Simulators which demonstrate, by means involving computing, the functioning of apparatus or of a system are in [G06](#), if no provision exists elsewhere. Components of simulators, if identical with real devices or machines, are classified in the relevant subclass for these devices or machines and not in [G06](#) or [G09](#);
  - a simulator may use the same time scale as the real device or operate on an expanded or compressed time scale;
  - models of real devices to reduced or expanded scales are not regarded as simulators
- The term "record carrier" is understood to mean 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 relative to the recorded information.

**Project: N/A (G06F)****U G06F 5/00**

**Methods or arrangements for data conversion without changing the order or content of the data handled (by coding or decoding [H03M](#))**

U G06F 5/06

- for changing the speed of data flow, i.e. speed regularising {or timing, e.g. delay lines, FIFO buffers; over- or underrun control therefor; ([G06F 7/78](#) takes precedence)}

G06F 5/065

- {Partitioned buffers, e.g. allowing multiple independent queues, bidirectional [FIFO's](#) [FIFO's](#)}

**Project: MP0124 (G06F)****U G06F 8/00**

**{Arrangements for software engineering (execution of stored program [G06F 9/06](#); testing or debugging [G06F 11/36](#); hardware/software co-design [G06F 17/50](#); software project management [G06Q 10/06](#))}**

U G06F 8/30

- {Creation or generation of source code}

- M G06F 8/38
  - • {~~to implement~~*Implementation of* user interfaces (interaction techniques for graphical user interfaces [G06F 3/048](#))}
- 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 9/4401
  - • • {Bootstrapping (secure booting [G06F 21/575](#); fault tolerant booting [G06F 11/1417](#); resetting means [G06F 1/24](#); power-on self test [G06F 11/2284](#))}
- M G06F 9/4405
  - • • • {*Initialisation* of multiprocessor systems}

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

- U G06F 11/00**
**Error detection; Error correction; Monitoring (methods or arrangements for verifying the correctness of marking on a record carrier [G06K 5/00](#); in information storage based on relative movement between record carrier and transducer [G11B](#), e.g. [G11B 20/18](#); in static stores [G11C](#); coding, decoding or code conversion, for error detection or error correction, in general [H03M 13/00](#))**

NOTE

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

- U G06F 11/07
  - responding to the occurrence of a fault, e.g. fault tolerance
- U G06F 11/08
  - • Error detection or correction by redundancy in data representation, e.g. by using checking codes
- G06F 11/10
  - • • Adding special bits or symbols to the coded information, e.g. parity check, casting out 9's or 11's
- U G06F 11/30
  - Monitoring
- U G06F 11/32
  - • with visual {or acoustical} indication of the functioning of the machine
- U G06F 11/324
  - • • {Display of status information}
- G06F 11/325
  - • • • {by lamps or ~~LED's~~*LED's*}
- U G06F 17/00**
**Digital computing or data processing equipment or methods, specially adapted for specific functions**
- G06F 17/60
  - {Administrative, commercial, managerial, supervisory or forecasting purposes (electronic cash registers other than digital data processing aspects thereof [G07G 1/12](#))}

WARNING

This group is no longer used for the classification of new documents as from January 1, 2006. The backlog of this group is being continuously reclassified to the relevant groups of [G06Q](#)

**Project: MP0123 (G06F)**

- M G06F 19/00** Digital computing or data processing equipment or methods, specially adapted for specific applications ([G06F 17/00](#) takes precedence; data processing systems or methods specially adapted for administrative, commercial, financial, managerial, supervisory or forecasting purposes [G06Q](#))

NOTE

This group only covers specific applications related to the fields of healthcare or life sciences, e.g. bioinformatics (~~-G09F 19/10-~~), medical informatics (~~-G06F 19/30-~~), or chemoinformatics (~~-G06F 19/70-~~).

WARNING

Groups ~~G06F 19/30 - G06F 19/709~~ do not correspond to former or future IPC groups.

Concordance CPC : IPC for said groups is as follows: ~~- G06F 19/30 - G06F 19/366 : G06F 19/00~~  
~~-G06F 19/70 - G06F 19/709 : G06F 19/00~~

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

- 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 2207/38 • Indexing scheme relating to groups [G06F 7/38](#) - [G06F 7/575](#)
- U G06F 2207/3804 • • Details (not used)
- U G06F 2207/3808 • • • concerning the type of numbers or the way they are handled
- U G06F 2207/3832 • • • • Less usual number representations
- G06F 2207/3836 • • • • ~~One's~~ **One's** complement

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

- U G06K 9/00** Methods or arrangements for reading or recognising printed or written characters or for recognising patterns, e.g. fingerprints (processing or analysis of tracks of nuclear particles [G01T 5/02](#); {information retrieval [G06F 17/30](#); medical diagnosis [G06F 19/34](#); recognition of molecular sequences [G06F 19/70](#); radio frequency identification [G06K 7/00](#); recognition of barcodes and similar code images [G06K 7/10](#); computer systems based on specific computational models [G06N](#); image analysis, inspection, positioning or tracking [G06T 7/00](#); recognition of acoustic speech signals [G10L 15/00](#); acoustic speaker identification [G10L 17/00](#)})

NOTES

- In this group, the following term is used with the meaning indicated:
  - "recognising" includes several functions such as extracting features, clustering, classifying or matching.
- IPC subgroups [G06K 9/20](#), [G06K 9/36](#), [G06K 9/62](#) and [G06K 9/74](#) refer to methods or arrangements that can be applied to a pattern independently of its nature or to that are applied to specific patterns not included in the subgroups in the range [G06K 9/00006](#) to [G06K 9/00852](#). The CPC subgroups in the range [G06K 9/00006](#) to [G06K 9/00852](#) refer to the same methods or arrangements when applied or specially adapted to the specific patterns to which these subgroups relate.
- 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 9/20 • Image acquisition

- U G06K 9/32      • • Aligning or centering of the image pick-up or image-field
- U G06K 9/3233      • • • {Determination of region of interest (segmentation for general image processing [G06T 7/0079](#))}
- G06K 9/3241      • • • • {Recognising objects as potential recognition candidates based on visual cues, e.g. shape}

**Project: N/A (G07D)****G07D****HANDLING OF COINS OR OF PAPER CURRENCY OR SIMILAR VALUABLE PAPERS, e.g. TESTING, SORTING BY DENOMINATIONS, COUNTING, DISPENSING, CHANGING OR DEPOSITING**NOTES

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

- "coins" also covers tokens of similar nature;
- "paper currency or similar valuable papers" covers banknotes, bills, cheques, vouchers, securities, bonds or the like.

2. This subclass covers handling of "coins" or "paper currency" insofar as they carry distinctive value features representative of money or the like.

Informative references:

- sorting in general [B07C](#)
- handling paper sheets in general [B65H](#)
- counting by weighing [G01G](#)
- counting of objects in general, i.e. without discriminating of denominations, [G06M](#)

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:

~~G07D 13/00~~ ~~G07D 13/00~~ covered by [G07D 11/00](#) and subgroup.

**Project: N/A (G07F)**

- U G07F 7/00      **Mechanisms actuated by objects other than coins to free or to actuate vending, hiring, coin or paper currency dispensing or refunding apparatus {(handling coins or paper currencies apart from coin-free or like apparatus [G07D](#); complete banking systems [G07F 19/00](#))}**
- U G07F 7/08      • by coded identity card or credit card {or other personal identification means (without personal verification means [G07F 7/02](#))}
- U G07F 7/10      • • together with a coded signal {e.g. in the form of personal identification information, like personal identification number [PIN] or biometric data}
- U G07F 7/1025      • • • {Identification of user by a PIN code}
- G07F 7/1083      • • • • {Counting of PIN attempts}
- G07F 19/00      Complete banking systems; Coded card-free arrangements adapted for dispensing or receiving monies or the like and posting such transactions to existing accounts, e.g. automatic teller machines (data processing equipment for bank accounting [G06Q 40/02](#); {mechanisms in general actuated by objects other than coins [G07F 7/00](#); handling coins or paper currencies apart from payment activated apparatus [G07D](#))}**

WARNING

Groups ~~G07F 19/20~~ – ~~G07F 19/211~~ do not correspond to former or future IPC groups. Concordance CPC : IPC for these groups is as follows: – ~~G07F 19/20~~ – ~~G07F 19/211~~ : ~~G07F 19/00~~

**Project: MP0123 (G08G)**

**M G08G 1/00** Traffic control systems for road vehicles (arrangement of road signs or traffic signals [E01F 9/00](#); {automatic vehicle control [B62D](#)})

**WARNING**

Groups G08G 1/22 - G08G 1/20 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - G08G 1/20 : G08G 1/123 - G08G 1/22 : G08G 1/16

**Project: N/A (G09B)**

**U G09B 5/00** Electrically-operated educational appliances (working with questions and answers [G09B 7/00](#); simulators [G09B 9/00](#); advertising or displaying in general [G09F](#))

**NOTE**

Group [G09B 5/08](#) takes precedence over groups [G09B 5/02](#) to [G09B 5/06](#).

**U G09B 5/06** • with both visual and audible presentation of the material to be studied  
**G09B 5/067** • • {Combinations of audio and projected visual presentation, e.g. film, slides}}

**U G09B 9/00** **Simulators for teaching or training purposes (for the use of weapons [F41](#); computing aspects [G06](#); {protocols for networked simulations [H04L 29/06034](#)})**

**U G09B 9/02** • for teaching control of vehicles or other craft

**U G09B 9/04** • • for teaching control of land vehicles

**G09B 9/052** • • • characterised by provision for recording or measuring trainee's trainee's performance (devices for psychotechnics, e.g. for vehicle drivers [A61B 5/16](#), [A61B 5/18](#))

**U G09B 9/08** • • for teaching control of aircraft, e.g. Link trainer

**U G09B 9/16** • • • Ambient or aircraft conditions simulated or indicated by instrument or alarm

**G09B 9/165** • • • • {Condition of cabin, cockpit or pilot's pilot's accessories}

**Project: N/A (G09F)**

**U G09F 23/00** **Advertising on or in specific articles, e.g. ashtrays, letter-boxes (on or in vehicles [G09F 21/00](#); containers, packaging-elements, or packages, with auxiliary means or provisions for displaying articles [B65D](#))**

**G09F 23/0058** • {on electrical household appliances, e.g. on a dishwasher, a washing machine or a refrigerator.}

**G09F 23/0066** • {on sports articles, e.g. golf clubs}

**G09F 23/0075** • {on tooth brushes}

**G09F 23/0083** • {on petrol dispensers}

**G09F 23/0091** • {on soda or beer cans}

**U G09F 23/10** • Advertisement on paper articles, e.g. booklets, newspapers

**G09F 23/105** • • {on paper for wrapping flowers}



**Project: N/A (G09G)****G09G**

**ARRANGEMENTS OR CIRCUITS FOR CONTROL OF INDICATING DEVICES USING STATIC MEANS TO PRESENT VARIABLE INFORMATION** (lighting in general [F21](#); arrangements for displaying electric variables or waveforms [G01R 3/00](#); devices or arrangements for the control of light beams [G02F 1/00](#); indicating of time by visual means [G04B 19/00](#), [G04C 17/00](#), [G04G 9/00](#); arrangements for transferring data between computers and peripheral equipment [G06F 3/00](#); visible signalling arrangements or devices [G08B 5/00](#); traffic control systems [G08G](#); display, advertising, signs [G09F](#), e.g. static indicating arrangements comprising an association of a number of separate sources or light control cells [G09F 9/00](#); static indicating arrangements comprising integral associations of a number of light sources [H01J](#), [H01K](#), [H01L](#), [H05B 33/12](#); circuits in pulse counters for indicating the result [H03K 21/18](#); coding, decoding or code conversion, in general [H03M](#); reproducing a picture or pattern using electric signals representing parts thereof and produced by scanning an original [H04N](#))

NOTES

1. This subclass covers indicator consoles, i.e. arrangements or circuits for processing control signals to achieve the display, e.g. for the calling up, reception, storage, regeneration, coding, decoding, addressing of control signals.
2. This subclass does not cover the structural details of the indicating devices, such as panels or tubes per se, or assemblies of individual light sources, which are covered by the relevant subclasses, e.g. [H01J](#), [H01K](#), [H01L](#), [G02F](#), [G09F](#), [H05B](#).
3. Contrary to subclass [H04N](#), in which are classified display devices capable of representing continuous brightness value scales, this subclass is limited to devices using only a discrete number of brightness values, e.g. visible/non-visible.
4. The visual effect may be produced by a luminescent screen scanned by an electron beam, directly by controlled light sources, by projection of light, from controlled light sources onto characters, symbols, or elements thereof drawn on a support, or by electric, magnetic, or acoustic control of the parameters of light rays from an independent source.

WARNING

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

<a href="#">G09G 5/32</a>	<a href="#">G09G 5/32</a>	covered by	<a href="#">G09G 5/42</a>
<a href="#">G09G 5/37</a>	<a href="#">G09G 5/37</a>	covered by	<a href="#">G09G 5/39</a>
<a href="#">G09G 5/373</a>	<a href="#">G09G 5/373</a>	covered by	<a href="#">G09G 5/39</a>
<a href="#">G09G 5/377</a>	<a href="#">G09G 5/377</a>	covered by	<a href="#">G09G 5/39</a>
<a href="#">G09G 5/38</a>	<a href="#">G09G 5/38</a>	covered by	<a href="#">G09G 5/42</a>
<a href="#">G09G 5/397</a>	<a href="#">G09G 5/397</a>	covered by	<a href="#">G09G 5/395</a> , <a href="#">G09G 5/399</a>

**Project: N/A (G10H)****U G10H 1/00**

**Details of electrophonic musical instruments (keyboards applicable also to other musical instruments [G10B](#), [G10C](#); arrangements for producing a reverberation or echo sound [G10K 15/08](#))**

## U G10H 1/36

- Accompaniment arrangements

## U G10H 1/361

- • {Recording/reproducing of accompaniment for use with an external source, e.g. karaoke systems}

## G10H 1/366

- • • {with means for modifying or correcting the external signal, e.g. pitch correction, reverberation, changing a ~~singer's~~ [singer's](#) voice}

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

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

**NOTES**

1. 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](#) to [G11B 7/00](#) and [G11B 21/00](#) when only the transducer is controlled and in groups [G11B 15/00](#), [G11B 17/00](#) and [G11B 19/00](#) when only the record carrier is controlled. When both record carrier and head are controlled, the documents are classified in [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](#)[G11B 5/65](#) covered by [G11B 5/64](#) to  
[G11B 5/656](#)  
[G11B 5/667](#)[G11B 5/667](#) covered by [G11B 5/66](#)  
[G11B 5/673](#) covered by [G11B 5/66](#)  
[G11B 7/16](#) covered by [G11B 7/135](#)  
[G11B 7/18](#) covered by [G11B 7/135](#)  
[G11B 7/30](#) covered by [G11B 7/00](#)  
[G11B 9/12](#)[G11B 9/12](#) - [G11B 9/14](#)[G11B 9/14](#)  
covered by [G11B 9/00](#)  
[G11B 11/24](#)[G11B 11/24](#) - [G11B 11/26](#)[G11B 11/26](#)  
covered by [G11B 11/00](#)  
[G11B 13/08](#)[G11B 13/08](#) covered by [G11B](#)

- U **G11B 3/00** **Recording by mechanical cutting, deforming or pressing, e.g. of grooves or pits; Reproducing by mechanical sensing; Record carriers therefor ([G11B 11/00](#), {[G11B 13/00](#)} take precedence; {recording by cutting or deforming using laser beam [G11B 7/00](#), using electron beam [G11B 9/10](#)})**
- U G11B 3/02 • Arrangements of heads (styli [G11B 3/44](#))
- U G11B 3/10 • • Arranging, supporting, or driving of heads or of transducers relatively to record carriers {(guiding record carriers [G11B 17/00](#), driving record carriers [G11B 19/00](#))}
- G11B 3/12 • • • Supporting in balanced, counterbalanced or loaded operative position {during transducing}, e.g. loading in direction of traverse†
- 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 19/022 • • {Control panels}
- G11B 19/025 • • • {Virtual† control panels, e.g. Graphical User Interface [GUI]}

#### Project: N/A (G11C)

- U **G11C 16/00** **Erasable programmable read-only memories ([G11C 14/00](#) takes precedence)**
- U G11C 16/02 • electrically programmable {(programmable multibit digital storage elements [G11C 11/5621](#))}

- U G11C 16/04      • • using variable threshold transistors, e.g. FAMOS
- U G11C 16/0408      • • • {comprising cells containing floating gate transistors ([G11C 16/0483](#),  
[G11C 16/0491](#) take precedence)}
- G11C 16/0425      • • • • {comprising cells containing a merged floating gate and select transistor}}

**Project: MP0123 (G11C)**

- M G11C 29/00      **Checking stores for correct operation; {Subsequent repair}; Testing stores during standby or offline operation {(testing of electronic circuits in general [G01R 31/28](#); error detection or error correction in computer memories during normal operation [G06F 11/1008](#), [G06F 11/1666](#); testing of computers during standby [G06F 11/22](#))}**

**WARNING**

Groups G11C 29/70 to G11C 29/886 do not correspond to former or current IPC groups.

Concordance CPC : IPC for these groups is the following: -- G11C 29/70 -- G11C 29/886 : G11C 29/00

**Project: RP0065 (H01C)**

- U H01C 17/00      **Apparatus or processes specially adapted for manufacturing resistors (providing fillings for housings or enclosures [H01C 1/02](#); reducing insulation surrounding a resistor to powder [H01C 1/03](#); manufacture of thermally variable resistors [H01C 7/02](#), [H01C 7/04](#))**
- U H01C 17/22      • adapted for trimming
- U H01C 17/24      • • by removing or adding resistive material ([H01C 17/23](#), [H01C 17/232](#),  
[H01C 17/235](#) take precedence)
- H01C 17/242      • • • by laser {(trimming by laser in general [B23K 26/0003](#) [B23K 26/351](#))}

**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 9/004      • Details
- U H01G 9/008      • • Terminals
- H01G 9/016      • • • {specially adapted for double-layer capacitors}
- U H01G 9/022      • • Electrolytes, absorbents (electrolytic or electrophoretic processes, apparatus therefor [C25](#); for primary, secondary or fuel cells [H01M](#))
- H01G 9/038      • • • {Electrolytes specially adapted for double-layer capacitors}

**WARNING**

This group is no longer used for classification of new documents as from October 1, 2012. The backfile is being continuously reclassified to group [H01G 11/54](#)

- U H01G 9/04      • • Electrodes {or formation of dielectric layers thereon}
- H01G 9/058      • • • {specially adapted for double-layer capacitors}

**WARNING**

This group is no longer used for classification of new documents as from October 1, 2012. The backfile is being continuously reclassified to group [H01G 11/22](#)

H01G 9/155

- {Double-layer capacitors}

WARNING

This group is no longer used for classification of new documents as from October 1, 2012. The backfile is being continuously reclassified to group [H01G 11/00](#) and its subgroups

**Project: MP0123 (H01G)****M H01G 11/00**

**Hybrid capacitors, i.e. capacitors having different positive and negative electrodes; Electric double-layer [EDL] capacitors [EDLCs]; Processes specially adapted for the manufacture thereof or of parts thereof**

NOTE

Group [H01G 11/02](#) takes precedence over groups [H01G 11/04](#) - [H01G 11/14](#)

WARNING

Groups H01G 11/00 to H01G 11/86 correspond to IPC 2013.01. Concordance CPC - IPC 2012.01 for these groups is as follows: - H01G 11/00 : H01G 9/155 - H01G 11/02 : H01G 9/28; - H01G 11/04 - H01G 11/20: H01G 9/155; - H01G 11/22 - H01G 11/50: H01G 9/058; - H01G 11/52 : H01G 9/155; - H01G 11/54 - H01G 11/64 : H01G 9/038; - H01G 11/66 - H01G 11/76 : H01G 9/016; - H01G 11/78 - H01G 11/84 : H01G 9/155; - H01G 11/86 : H01G 9/058

**Project: N/A (H01J)****U H01J 29/00**

**Details of cathode-ray tubes or of electron-beam tubes of the types covered by group [H01J 31/00](#)**

U H01J 29/46

- Arrangements of electrodes and associated parts for generating or controlling the ray or beam, e.g. electron-optical arrangement {(transit time tubes [H01J 23/00](#), [H01J 25/00](#); X-ray tubes [H01J 35/00](#); beam tubes for examining ions, e.g. electron or ion microscopes, or processing of objects or materials e.g. electron or ion beam tubes [H01J 37/04](#); electron multipliers [H01J 43/04](#); handling of radiation or particles, e.g. focusing, deviating, not otherwise provided for [G21K 1/00](#))}

U H01J 29/80

- • Arrangements for controlling the ray or beam after passing the main deflection system, e.g. for post-acceleration or post-concentration, for colour switching {([H01J 29/701](#) takes precedence)}

U H01J 29/803

- • • {for post-acceleration or post-deflection, e.g. for colour switching}

H01J 29/806

- • • {Electron lens mosaics, e.g. [fly's fly's](#) eye lenses, colour selection lenses}

**U H01J 37/00**

**Discharge tubes with provision for introducing objects or material to be exposed to the discharge, e.g. for the purpose of examination or processing thereof ([H01J 33/00](#), [H01J 40/00](#), [H01J 41/00](#), [H01J 47/00](#), [H01J 49/00](#) take precedence; {scanning-probe techniques or apparatus [G01Q](#)} ; contactless testing of electronic circuits using electron beams [G01R 31/305](#); {particle accelerators [H05H](#)})**

U H01J 37/30

- Electron-beam or ion-beam tubes for localised treatment of objects

U H01J 37/317

- • for changing properties of the objects or for applying thin layers thereon, e.g. for ion implantation ([H01J 37/36](#) takes precedence)

U H01J 37/3174

- • • {Particle-beam lithography, e.g. electron beam lithography}

H01J 37/3177

- • • • {Multi-beam, e.g. [fly's fly's](#) eye, comb probe}

**Project: MP0124 (H01J)**

- U H01J 37/32
  - Gas-filled discharge tubes, {e.g. for surface treatment of objects such as coating, plating, etching, sterilising or bringing about chemical reactions} ({general methods or devices for heat treatments of ferrous or non-ferrous metals or alloys by cathodic discharges [C21D 1/38](#); methods of carburising or nitriding of metals in general [C23C 8/00](#); methods for coating, plating or surface treating of or with metallic material [C23C 8/36](#), [C23C 14/32](#), [C23C 16/50](#); methods for coating, plating or surface treating of or with semiconductors [H01L 21/00](#); } heating by discharge [H05B](#))
- U H01J 37/32009
  - {Arrangements for generation of plasma specially adapted for examination or treatment of objects, e.g. plasma sources (plasma generation in general [H05H 1/24](#))}
- M H01J 37/32082
  - • {Radio frequency generated discharge (~~H01J~~[H01J 37/32357](#), ~~H01J~~[H01J 37/32366](#), ~~H01J~~[H01J 37/32394](#) and ~~H01J~~[H01J 37/32403](#) take precedence)}
- M H01J 37/32192
  - • {Microwave generated discharge (~~H01J~~[H01J 37/32357](#), ~~H01J~~[H01J 37/32366](#), ~~H01J~~[H01J 37/32394](#), ~~H01J~~[H01J 37/32403](#) take precedence)}
- M H01J 37/32321
  - • {Discharge generated by other radiation (~~H01J~~[H01J 37/32055](#), ~~H01J~~[H01J 37/32055](#), ~~H01J~~[H01J 37/32073](#), ~~H01J~~[H01J 37/32082](#), ~~H01J~~[H01J 37/32192](#), ~~H01J~~[H01J 37/32348](#) take precedence)}

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

- U **H01J 2217/00** **Gas-filled discharge tubes ([H01J 2211/00](#) takes precedence)**
- U H01J 2217/38
  - Cold-cathode tubes
- U H01J 2217/40
  - • Gas discharge switches
- U H01J 2217/402
  - • • Multiple switches
- H01J 2217/4025
  - • • • for addressing electro-optical devices, i.e. ~~LCD's~~[LCD's](#)
- U H01J 2217/49
  - • Display panels, e.g. not making use of alternating current ([H01J 2211/10](#) takes precedence)
- U H01J 2217/492
  - • • Details
- U H01J 2217/49264
  - • • • Vessels
- H01J 2217/49278
  - • • • • Coatings ([H01J 2217/49292](#) takes precedence)]
- U **H01J 2229/00** **Details of cathode ray tubes or electron beam tubes ([H01J 2329/00](#) takes precedence)**
- U H01J 2229/89
  - Optical components associated with the vessel
- H01J 2229/8926
  - • Active components, e.g. ~~LCD's~~[LCD's](#), indicators, illuminators and moving devices



**Project: MP0117, MP0123 (H01L)****M 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 provided for in any other subclass and details thereof. This includes:

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

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

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

2. In this subclass:

- The expression "solid state body" refers to the body of material within which, or at the surface of which, the physical effects characteristic of the device occur. In thermoelectric devices it includes all materials in the current path.  
Regions in or on the body of the device (other than the solid state body itself), which exert an influence on the solid state body electrically, are considered to be "electrodes" whether or not an external electrical connection is made thereto. {Electrodes are often referred to as "contacts" in the literature.} An electrode may include several portions and the term includes metallic regions which exert influence on the solid state body through an insulating region, (e.g. capacitive coupling) and inductive coupling arrangements to the body. The dielectric region in a capacitive arrangement is regarded as part of the electrode. In arrangements including several portions only those portions which exert an influence on the solid state body by virtue of their shape, size or disposition or the material of which they are formed are considered to be part of the electrode. The other portions are considered to be "arrangements for conducting electric current to or from the solid state body" or "interconnections between solid state components formed in or on a common substrate", i.e. leads.
- The word "device" refers to an electric circuit element; where an electric circuit element is one of a plurality or elements formed in or on a common substrate it is referred to as a "component".
- A "complete device" is a device in its fully assembled state which may or may not require further treatment, e.g. electro-forming, before it is ready for use but which does not require the addition of further structural units.



- The word "parts" includes all structural units which are included in a complete device.
- A "container" is an enclosure forming part of the complete device and is essentially a solid construction in which the body of the device is placed, or which is formed around the body without forming an intimate layer thereon. An enclosure which consists of one or more layers formed on the body and in intimate contact therewith is referred to as an "encapsulation".
- "Integrated circuit" is a device where all components, e.g. diodes, resistors, are built up on a common substrate and form the device including interconnections between the components.

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

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

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

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

#### WARNING

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

[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~~[H01L 21/58](#) covered by [H01L 24/80](#)  
~~H01L 21/8239~~[H01L 21/8239](#) covered by [H01L 27/1052](#)  
[H01L 21/60](#) covered by [H01L 24/80](#)  
[H01L 21/66](#) covered by [H01L 22/34](#)  
[H01L 21/603](#) covered by [H01L 24/80](#)  
[H01L 21/607](#) covered by [H01L 24/80](#)  
[H01L 21/8242](#) covered by [H01L 27/10844](#)  
[H01L 21/8244](#) covered by [H01L 27/11](#)  
[H01L 21/8246](#) covered by [H01L 27/112](#)  
[H01L 21/8247](#) covered by [H01L 27/11517](#)  
[H01L 21/98](#) covered by [H01L 25/50](#)  
[H01L 29/38](#) covered by [H01L 29/04](#) to [H01L 29/365](#)  
[H01L 29/96](#) covered by [H01L 29/68](#) to [H01L 29/945](#)  
[H01L 51/30](#) covered by [H01L 51/0032](#)  
[H01L 51/40](#) covered by [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](#)

2. Groups H01L 23/562 to H01L 23/576 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H01L 23/562 - H01L 23/564 : H01L 23/00 - H01L 23/57 : H01L 23/58

3. Groups H01L 22/00 to H01L 22/34 do not correspond to a former or current IPC group. Concordance CPC : IPC for these groups is as follows: - H01L 22/00 - H01L 22/34 : H01L 21/66

4. Groups H01L 24/00 to H01L 24/98 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H01L 24/00 - H01L 24/98 : H01L 23/00

5. Group H01L 25/50 does not correspond to a former or current IPC group. Concordance CPC : IPC for this group is as follows: - H01L 25/50 : H01L 21/98

6. Groups H01L 28/00 - H01L 28/92 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H01L 28/00 - H01L 28/92 : H01L 49/02

## Project: MP0117 (H01L)

- U H01L 21/00** Processes or apparatus adapted for the manufacture or treatment of semiconductor or solid state devices or of parts thereof ({testing or measuring during manufacture or treatment, or reliability measurements [H01L 22/00](#); multistep manufacturing processes for passive two-terminal components without a potential-jump or surface barrier for integrated circuits [H01L 28/00](#); } processes or apparatus peculiar to the manufacture or treatment of devices provided for in groups [H01L 31/00](#) to [H01L 51/00](#) or of parts thereof, see these groups; single-step processes covered by other subclasses, see the relevant subclasses, e.g. [C23C](#), [C30B](#); photomechanical production of textured or patterned surfaces, materials or originals therefor, apparatus specially adapted therefor, in general [G03F](#))
- U H01L 21/02** • Manufacture or treatment of semiconductor devices or of parts thereof
- U H01L 21/02002** • • {Preparing wafers}
- NOTES**
1. This group covers processes for manufacturing wafers prior to the fabrication of any device, i.e. between the sawing of ingots (covered by [B28D](#)) and the cleaning of substrates (covered by [H01L 21/02041](#) ).
2. This group does not cover:
- simple use of grinding or polishing machines [B24B](#)
  - thermal smoothening [H01L 21/324](#)
- M H01L 21/02005** • • • {Preparing bulk and homogeneous wafers}
- WARNING**  
Not complete, see H01L 21/30 and subgroups
- D H01L 21/02038** • • • {Preparing wafers having an insulating layer, e.g. SOI wafers}
- WARNING**  
Not complete, see H01L 21/7624 and subgroups
- M H01L 21/02104** • • {Forming layers (deposition in general [C23C](#); crystal growth in general [C30B](#))}
- WARNING**  
Group Groups [H01L 21/02104](#) and subgroups - [H01L 21/02694](#) are not completeincomplete pending reorganisation. See also reclassification of documents from groups [H01L 21/06](#), [H01L 21/16](#), and [H01L 21/20](#); [H01L 21/36](#);

*Groups H01L 21/02104 – H01L 21/02694, H01L 21/06, H01L 21/20, and H01L 21/16 and subgroups should be considered in order to perform a complete search.*

- M H01L 21/02107      • • {Forming insulating materials on a substrate}

WARNING

*This group and subgroups Groups H01L 21/02107 – H01L 21/02326 are not complete/incomplete pending the completion/reclassification of a reclassification; see also documents from groups H01L 21/312, H01L 21/314, H01L 21/316, and H01L 21/318. Groups H01L 21/02107 – H01L 21/02326, H01L 21/312, H01L 21/314, H01L 21/316, and subgroups thereof H01L 21/318 should be considered in order to perform a complete search.*

- M H01L 21/02365      • • {Forming inorganic semiconducting materials on a substrate (for light-sensitive devices H01L 31/00)}

WARNING

*Group H01L 21/02365 is incomplete pending reclassification of documents from groups H01L 21/06, H01L 21/16, and H01L 21/20. Groups H01L 21/06, H01L 21/16, and H01L 21/20 should be considered in order to perform a complete search.*

- U H01L 21/04      • • the devices having at least one potential-jump barrier or surface barrier, e.g. PN junction, depletion layer, carrier concentration layer {(multistep processes specially adapted for the manufacture of said devices H01L 29/66007, H01L 29/401; details of semiconductor bodies H01L 29/02)}

- M H01L 21/06      • • the devices having semiconductor bodies comprising selenium or tellurium in uncombined form other than as impurities in semiconductor bodies of other materials

WARNING

*This group Group H01L 21/06 is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to impacted by reclassification into groups H01L 21/02365 and subgroups – H01L 21/02694. Groups H01L 21/06 and H01L 21/02365 – H01L 21/02694 should be considered in order to perform a complete search.*

- M H01L 21/16      • • the devices having semiconductor bodies comprising cuprous oxide or cuprous iodide

WARNING

*This group Group H01L 21/16 is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to impacted by reclassification into groups H01L 21/02365 and subgroups – H01L 21/02694. Groups H01L 21/16 and H01L 21/02365 – H01L 21/02694 should be considered in order to perform a complete search.*

- U H01L 21/18      • • the devices having semiconductor bodies comprising elements of the fourth group of the Periodic System or IIIIV compounds with or without impurities, e.g. doping materials {(H01L 21/041 to H01L 21/0425, H01L 21/045 to H01L 21/048 take precedence)}

NOTE

This group covers also processes and apparatus which, by using the appropriate technology, are clearly suitable for manufacture or treatment of devices whose bodies comprise elements of the fourth group of the Periodic

System or AllIBV compounds, even if the material used is not explicitly specified.

- M H01L 21/20
- • • Deposition of semiconductor materials on a substrate, e.g. epitaxial growth {solid phase epitaxy}
- WARNING
- ~~This group~~ *Group H01L 21/20* is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to *impacted by reclassification into groups H01L 21/02365 and subgroups – H01L 21/02694.*
- Groups H01L 21/20 and H01L 21/02365 – H01L 21/02694 should be considered in order to perform a complete search.*
- U H01L 21/26
- • • Bombardment with radiation {(H01L 21/3105 takes precedence)}
- U H01L 21/263
- • • • with high-energy radiation (H01L 21/261 takes precedence)
- M H01L 21/265
- • • • • producing ion implantation (ion beam tubes for localised treatment H01J 37/30)
- WARNING
- ~~The groups~~ *Groups H01L 21/26566, H01L 21/2658 and H01L 21/26593* are not complete, see provisionally also *incomplete pending reclassification of documents from groups H01L 21/26506 and H01L 21/2654 and their subgroups.*
- Groups H01L 21/26566, H01L 21/2658, H01L 21/26593, H01L 21/26506 and H01L 21/2654 should be considered in order to perform a complete search.*
- U H01L 21/30
- • • • Treatment of semiconductor bodies using processes or apparatus not provided for in groups H01L 21/20 to H01L 21/26 (manufacture of electrodes thereon H01L 21/28)
- U H01L 21/31
- • • • • to form insulating layers thereon, e.g. for masking or by using photolithographic techniques (layers forming electrodes H01L 21/28; encapsulating layers H01L 21/56); After treatment of these layers
- F H01L 21/312  
(Frozen)
- • • • • Organic layers, e.g. photoresist (H01L 21/3105, H01L 21/32 take precedence; {photoresists per se G03C})
- WARNING
- ~~This group and subgroups~~ *Groups H01L 21/312 – H01L 21/3128* are no longer used for the classification of new documents as from May 1, 2011. The backlog content of ~~this group~~ *these groups* is being continuously reclassified to *into groups H01L 21/02107 and subgroups thereof – H01L 21/02326.*
- Groups H01L 21/02107 – H01L 21/02326 should be considered in order to perform a complete search.*
- F H01L 21/3121  
(Frozen)
- • • • • {Layers comprising organo-silicon compounds}
- F H01L 21/3122  
(Frozen)
- • • • • {layers comprising polysiloxane compounds}
- F H01L 21/3124  
(Frozen)
- • • • • {layers comprising hydrogen silsesquioxane}
- F H01L 21/3125  
(Frozen)
- • • • • {layers comprising silazane compounds}
- F H01L 21/3127  
(Frozen)
- • • • • {Layers comprising fluoro (hydro)carbon compounds, e.g. polytetrafluoroethylene}

- F H01L 21/3128 (Frozen) . . . . . {by Langmuir-Blodgett techniques}
- F H01L 21/314 (Frozen) . . . . . Inorganic layers ([H01L 21/3105](#), [H01L 21/32](#) take precedence)  
WARNING  
~~This group and subgroups~~ Groups [H01L 21/314](#) – [H01L 21/3185](#) are no longer used for the classification of new documents as ~~from~~ of May 1, 2011. The backlog content of ~~this~~ these group is being continuously reclassified ~~to~~ into group [H01L 21/02107](#) and subgroups thereof – [H01L 21/02326](#).  
 Groups [H01L 21/02107](#) – [H01L 21/02326](#) should be considered in order to perform a complete search.
- F H01L 21/3141 (Frozen) . . . . . {Deposition using atomic layer deposition techniques [ALD]}
- F H01L 21/3142 (Frozen) . . . . . {of nano-laminates, e.g. alternating layers of Al<sub>2</sub>O<sub>3</sub>-HfO<sub>2</sub>}
- F H01L 21/3143 (Frozen) . . . . . {composed of alternated layers or of mixtures of nitrides and oxides or of oxinitrides, e.g. formation of oxinitride by oxidation of nitride layers}
- F H01L 21/3144 (Frozen) . . . . . {on silicon}
- F H01L 21/3145 (Frozen) . . . . . {formed by deposition from a gas or vapour}
- F H01L 21/3146 (Frozen) . . . . . {Carbon layers, e.g. diamond-like layers}
- F H01L 21/3147 (Frozen) . . . . . {Epitaxial deposition of insulating materials}
- F H01L 21/3148 (Frozen) . . . . . {Silicon Carbide layers}
- F H01L 2021/3149 (Frozen) . . . . . {Langmuir-Blodgett techniques}
- F H01L 21/316 (Frozen) . . . . . composed of oxides or glassy oxides or oxide based glass  
WARNING  
~~This group and subgroups are~~ Group [H01L 21/316](#) is no longer used for the classification of new documents as ~~from~~ of May 1, 2011. The backlog content of this group is being continuously reclassified ~~to~~ into groups [H01L 21/02107](#) and subgroups thereof – [H01L 21/02326](#).  
 Groups [H01L 21/02107](#) – [H01L 21/02326](#) should be considered in order to perform a complete search.
- F H01L 21/31604 (Frozen) . . . . . {Deposition from a gas or vapour ([H01L 21/31691](#), [H01L 21/31695](#) take precedence)}
- F H01L 21/31608 (Frozen) . . . . . {Deposition of SiO<sub>2</sub> ([H01L 21/31625](#), [H01L 21/31629](#) and [H01L 21/31633](#) take precedence)}
- F H01L 21/31612 (Frozen) . . . . . {on a silicon body}
- F H01L 21/31616 (Frozen) . . . . . {Deposition of Al<sub>2</sub>O<sub>3</sub>}
- F H01L 21/3162 (Frozen) . . . . . {on a silicon body}
- F H01L 21/31625 (Frozen) . . . . . {Deposition of boron or phosphorus doped silicon oxide, e.g. BSG, PSG, BPSG}

F	H01L 21/31629 (Frozen)	. . . . . {Deposition of halogen doped silicon oxide, e.g. fluorine doped silicon oxide}
F	H01L 21/31633 (Frozen)	. . . . . {Deposition of carbon doped silicon oxide, e.g. SiOC}
F	H01L 21/31637 (Frozen)	. . . . . {Deposition of Tantalum oxides, e.g. Ta <sub>2</sub> O <sub>5</sub> }
F	H01L 21/31641 (Frozen)	. . . . . {Deposition of Zirconium oxides, e.g. ZrO <sub>2</sub> }
F	H01L 21/31645 (Frozen)	. . . . . {Deposition of Hafnium oxides, e.g. HfO <sub>2</sub> }
F	H01L 21/3165 (Frozen)	. . . . . {formed by oxidation ( <a href="#">H01L 21/31691</a> , <a href="#">H01L 21/31695</a> take precedence)}
F	H01L 21/31654 (Frozen)	. . . . . {of semiconductor materials, e.g. the body itself}
F	H01L 21/31658 (Frozen)	. . . . . {by thermal oxidation, e.g. of SiGe}
F	H01L 21/31662 (Frozen)	. . . . . {of silicon in uncombined form}
F	H01L 21/31666 (Frozen)	. . . . . {of AIII BV compounds}
F	H01L 21/3167 (Frozen)	. . . . . {of anodic oxidation}
F	H01L 21/31675 (Frozen)	. . . . . {of silicon}
F	H01L 21/31679 (Frozen)	. . . . . {of AIII BV compounds}
F	H01L 21/31683 (Frozen)	. . . . . {of metallic layers, e.g. Al deposited on the body, e.g. formation of multi-layer insulating structures}
F	H01L 21/31687 (Frozen)	. . . . . {by anodic oxidation}
F	H01L 21/31691 (Frozen)	. . . . . {with perovskite structure}
F	H01L 21/31695 (Frozen)	. . . . . {Deposition of porous oxides or porous glassy oxides or oxide based porous glass}
F	H01L 21/318 (Frozen)	. . . . . composed of nitrides

**WARNING**

~~This group and subgroups are~~ Group [H01L 21/318](#) is no longer used for the classification of ~~new~~ documents as ~~from~~ May 1, 2011. The ~~backlog content~~ of this group is being ~~continuously~~ reclassified ~~to~~ into groups [H01L 21/02107](#) and subgroups thereof – [H01L 21/02326](#).

[Groups H01L 21/02107 – H01L 21/02326](#) should be considered in order to perform a complete search.

F	H01L 21/3185 (Frozen)	. . . . . {of siliconnitrides}
U	H01L 21/324	. . . . . Thermal treatment for modifying the properties of semiconductor bodies, e.g. annealing, sintering ( <a href="#">H01L 21/20</a> to <a href="#">H01L 21/288</a> and <a href="#">H01L 21/302</a> to <a href="#">H01L 21/322</a> take precedence)



- M H01L 21/3247 . . . . . {for altering the shape, e.g. smoothing the surface}
- WARNING  
~~Not complete, see provisionally also~~ Group [H01L 21/3247](#) is incomplete pending reclassification of documents from group [H01L 21/324](#).  
 Groups [H01L 21/324](#) and [H01L 21/3247](#) should be considered in order to perform a complete search.
- U H01L 21/34 . . . the devices having semiconductor bodies not provided for in groups {[H01L 21/0405](#), [H01L 21/0445](#)}, [H01L 21/06](#), [H01L 21/16](#) and [H01L 21/18](#) with or without impurities, e.g. doping materials
- D H01L 21/36 . . . . . Deposition of semiconductor materials on a substrate, e.g. epitaxial growth
- WARNING  
 This group is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to [H01L 21/02365](#) and subgroups
- D H01L 21/363 . . . . . using physical deposition, e.g. vacuum deposition, sputtering
- D H01L 21/365 . . . . . using reduction or decomposition of a gaseous compound yielding a solid condensate, i.e. chemical deposition
- D H01L 21/368 . . . . . using liquid deposition
- M H01L 21/44 . . . . . Manufacture of electrodes on semiconductor bodies using processes or apparatus not provided for in groups ~~H01L 21/36~~[H01L 21/38](#) to [H01L 21/428](#)
- U H01L 21/46 . . . . . Treatment of semiconductor bodies using processes or apparatus not provided for in groups [H01L 21/428](#) (manufacture of electrodes thereon [H01L 21/44](#))
- M H01L 21/477 . . . . . Thermal treatment for modifying the properties of semiconductor bodies, e.g. annealing, sintering (~~H01L 21/36~~[H01L 21/38](#) to [H01L 21/449](#) and [H01L 21/461](#) to [H01L 21/475](#) take precedence)
- M H01L 21/479 . . . . . Application of electric currents or fields, e.g. for electroforming (~~H01L 21/36~~[H01L 21/38](#) to [H01L 21/449](#) and [H01L 21/461](#) to ~~H01L 21/477~~[H01L 21/475](#) take precedence)
- U H01L 21/50 . . . . . Assembly of semiconductor devices using processes or apparatus not provided for in a single one of the subgroups [H01L 21/06](#) to [H01L 21/326](#), {e.g. sealing of a cap to a base of a container}
- NOTE  
 Arrangements for connecting or disconnecting semiconductor or other solid state bodies, or methods related thereto, other than those arrangements or methods covered by the following subgroups, are covered by [H01L 24/00](#)
- D H01L 21/58 . . . . . {Insulative} mounting semiconductor devices on supports {(H01L 21/563; H01L 23/49513 take precedence)}
- WARNING  
 This group is no longer used for the classification of new documents as from June 1, 2010. The backlog of this group is being continuously reclassified to [H01L 24/80](#) and subgroups



- U H01L 21/67
- Apparatus specially adapted for handling semiconductor or electric solid state devices during manufacture or treatment thereof; Apparatus specially adapted for handling wafers during manufacture or treatment of semiconductor or electric solid state devices or components; {Apparatus not specifically provided for elsewhere (processes per se [H01L 21/30](#), [H01L 21/46](#), [H01L 23/00](#); simple temporary support means, e.g. using adhesives, electric or magnetic means [H01L 21/68](#), [H01L 21/302](#); apparatus for manufacturing arrangements for connecting or disconnecting semiconductor or solid-state bodies and for methods related thereto [H01L 24/74](#);)}
- NOTE
- In this subgroup the term substrate designates a semiconductor or electric solid state device or component, or a wafer
- U H01L 21/677
- • for conveying, e.g. between different workstations
- M H01L 21/67703
- • • {between different workstations}
- WARNING
- This group and subgroups are not complete pending completion of reorganization; see also H01L 21/677
- U H01L 21/67739
- • • {into and out of processing chamber}
- M H01L 21/6776
- • • • {Continuous loading and unloading into and out of a processing chamber, e.g. transporting belts within processing chambers}
- WARNING
- Not complete pending completion of reorganization; see also H01L 21/677
- U H01L 21/70
- Manufacture or treatment of devices consisting of a plurality of solid state components formed in or on a common substrate or of parts thereof; Manufacture of integrated circuit devices or of parts thereof ({multistep manufacturing processes of assemblies consisting of a plurality of individual semiconductor or other solid state devices [H01L 25/00](#)}, manufacture of assemblies consisting or preformed electrical components [H05K 3/00](#), [H05K 13/00](#))
- U H01L 21/71
- • Manufacture of specific parts of devices defined in group [H01L 21/70](#) ({[H01L 21/0405](#), [H01L 21/0445](#)}, [H01L 21/28](#), [H01L 21/44](#), [H01L 21/48](#) take precedence)
- M H01L 21/768
- • • Applying interconnections to be used for carrying current between separate components within a device {comprising conductors and dielectrics}
- NOTE
- Groups [H01L 21/768](#) to [H01L 21/76898](#) ~~cover~~ [cover](#) multi-step processes for manufacturing interconnections.
- Information peculiar to single-step processes should also be classified in the corresponding group, e.g.:-
- ~~cleaning~~ [H01L 21/02041](#)
  - ~~etching~~ [H01L 21/311](#), [H01L 21/3213](#)
  - ~~masking~~ [H01L 21/027](#), [H01L 21/033](#), [H01L 21/31144](#), [H01L 21/32139](#)
  - ~~planarizing~~ [H01L 21/3105](#), [H01L 21/321](#)
- [cleaning](#) [H01L 21/02041](#)
  - [etching](#) [H01L 21/311](#), [H01L 21/3213](#)
  - [masking](#) [H01L 21/027](#), [H01L 21/033](#), [H01L 21/31144](#), [H01L 21/32139](#)
  - [planarizing](#) [H01L 21/3105](#), [H01L 21/321](#)
- U H01L 21/76801
- • • • {characterised by the formation and the after-treatment of the dielectrics, e.g. smoothing}
- U H01L 21/76802
- • • • • {by forming openings in dielectrics}

- M H01L 21/76814 . . . . . {post-treatment or after-treatment, e.g. cleaning or removal of oxides on underlying conductors}

**WARNING**

Groups H01L 21/76814 – H01L 21/76817 are not complete; see provisionally H01L 21/76802

- M H01L 21/76822 . . . . . {Modification of the material of dielectric layers, e.g. grading, after-treatment to improve the stability of the layers, to increase their density etc.}

**WARNING**

Groups H01L 21/76822 – H01L 21/76837 are not complete; see provisionally H01L 21/76804

- U H01L 23/00** Details of semiconductor or other solid state devices ([H01L 25/00](#) takes precedence; {structural arrangements for testing or measuring during manufacture or treatment, or for reliability measurements [H01L 22/00](#); arrangements for connecting or disconnecting semiconductor or solid-state bodies, or methods related thereto [H01L 24/00](#); finger print sensors [G06K 9/00006](#)})

**NOTE**

This group does not cover:

- details of semiconductor bodies or of electrodes of devices provided for in group [H01L 29/00](#), which details are covered by that group;
- details peculiar to devices provided for in a single main group of groups [H01L 31/00](#) to [H01L 51/00](#), which details are covered by those groups.

- U H01L 23/48 . Arrangements for conducting electric current to or from the solid state body in operation, e.g. leads, terminal arrangements (in general [H01R](#)); {Selection of materials therefor}

**NOTE**

Arrangements for connecting or disconnecting semiconductor or other solid state bodies, or methods related thereto, other than those arrangements or methods covered by the following subgroups, are covered by [H01L 24/00](#)

- M H01L 23/482 . . consisting of lead-in layers inseparably applied to the semiconductor body {(electrodes [H01L 29/40](#))}

**WARNING**

The documents of this group dealing with arrangements for connecting semiconductor or other solid state bodies are being continuously reclassified to H01L 24/01 and subgroups

- M H01L 23/485 . . . consisting of layered constructions comprising conductive layers and insulating layers, e.g. planar contacts {([H01L 23/4821](#), [H01L 23/4822](#), [H01L 23/4824](#), [H01L 23/4825](#) take precedence; materials [H01L 23/532](#), bond pads [H01L 24/02](#), bump connectors [H01L 24/10](#))}

**WARNING**

The documents of this group dealing with arrangements for connecting semiconductor or other solid state bodies are being continuously reclassified to H01L 24/01 and subgroups

- U H01L 23/488 . . consisting of soldered {or bonded} constructions {(bump connectors [H01L 24/01](#))}

M H01L 23/49

- • • Wire-like {arrangements or pins or rods (using optical fibres [H01L 23/48](#); pins attached to insulating substrates [H01L 23/49811](#))}

**WARNING**

This group is no longer used for the classification of new documents as from June 1, 2010. The backlog of this group is being continuously reclassified to **H01L23/00C2W** and subgroups

M H01L 24/00

**{Arrangements for connecting or disconnecting semiconductor or solid-state bodies; Methods or apparatus related thereto}**

**NOTES**

1. This group ~~does not cover~~*does not cover*: – details of semiconductor bodies or of electrodes of devices provided for in group H01L 29/00, which details are covered by that group; – details peculiar to devices provided for in a single main group of groups H01L 31/00 to H01L 51/00, which details are covered by those groups. – printed circuits, which are covered by groups H05K 1/00 to H05K 1/189; – apparatus or manufacturing processes for printed circuits, which are covered by groups H05K 3/00 to H05K 3/4685; – manufacture or treatment of parts, which are covered by group H01L 21/48 and subgroups except H01L 21/4885 to H01L 21/4896; – assemblies of semiconductor devices, which are covered by groups H01L 21/50 to H01L 21/568; – applying interconnections to be used for carrying current between separate components within a device, which is covered by group H01L 21/768 and subgroups; – containers or seals, which are covered by groups H01L 23/02 to H01L 23/10; – mountings, which are covered by groups H01L 23/12 to H01L 23/15 and subgroups; – arrangements for cooling, heating, ventilating or temperature compensation, which are covered by groups H01L 23/34 to H01L 23/4735; – arrangements for conducting electric current, which are covered by groups H01L 23/48 to H01L 23/50, and by groups H01L 23/52 to H01L 23/5389; – structural electrical arrangements, which are covered by groups H01L 23/58 to H01L 23/66; – assemblies of semiconductor or other solid state devices, which are covered by groups H01L 25/00 to H01L 25/18

- details of semiconductor bodies or of electrodes of devices provided for in group [H01L 29/00](#), which details are covered by that group;
- details peculiar to devices provided for in a single main group of groups [H01L 31/00](#) to [H01L 51/00](#), which details are covered by those groups.
- printed circuits, which are covered by groups [H05K 1/00](#) to [H05K 1/189](#);
- apparatus or manufacturing processes for printed circuits, which are covered by groups [H05K 3/00](#) to [H05K 3/4685](#);
- manufacture or treatment of parts, which are covered by group [H01L 21/48](#) and subgroups except [H01L 21/4885](#) to [H01L 21/4896](#);
- assemblies of semiconductor devices, which are covered by groups [H01L 21/50](#) to [H01L 21/568](#);
- applying interconnections to be used for carrying current between separate components within a device, which is covered by group [H01L 21/768](#) and subgroups;
- containers or seals, which are covered by groups [H01L 23/02](#) to [H01L 23/10](#);
- mountings, which are covered by groups [H01L 23/12](#) to [H01L 23/15](#) and subgroups;
- arrangements for cooling, heating, ventilating or temperature compensation, which are covered by groups [H01L 23/34](#) to [H01L 23/4735](#);
- arrangements for conducting electric current, which are covered by groups [H01L 23/48](#) to [H01L 23/50](#), and by groups [H01L 23/52](#) to [H01L 23/5389](#);
- structural electrical arrangements, which are covered by groups [H01L 24/80](#) to [H01L 23/66](#);

- *assemblies of semiconductor or other solid state devices, which are covered by groups H01L 25/00 to H01L 25/18.*

2. In this group the following indexing codes are used : [H01L 24/00](#), [H01L 2224/00](#), [H01L 2924/00](#), and subgroups thereof

**WARNING**

~~H01L 21/4885, H01L 21/58, H01L 23/48, H01L 23/482, H01L 23/485, H01L 23/488~~

M H01L 24/01

- {Means for bonding being attached to, or being formed on, the surface to be connected, e.g. chip-to-package, die-attach, "first-level" interconnects; Manufacturing methods related thereto}

**WARNING**

~~1. Not complete, see provisionally also H01L 23/482, H01L 23/485 and subgroups 2. Pending reorganisation subgroups of this group are not complete; see also this group and the other subgroups~~

M H01L 24/02

- {Bonding areas (on insulating substrates, e.g. chip carriers, [H01L 23/49816](#), [H01L 23/49838](#), [H01L 23/5389](#)); Manufacturing methods related thereto}

**WARNING**

~~1. Pending reorganisation see provisionally also Groups [H01L 24/02](#) – [H01L 24/09](#) are incomplete pending reclassification of documents from groups [H01L 24/02](#) and [H01L 24/10](#) for Under Bump Metallization [UBM] 2. Pending reorganisation, subgroups of this group are not. Groups [H01L 24/02](#) – [H01L 24/09](#) and [H01L 24/10](#) should be considered in order to perform a complete; see also this group search.~~

M H01L 24/18

- {High density interconnect [HDI] connectors; Manufacturing methods related thereto (interconnection structure between a plurality of semiconductor chips [H01L 23/5389](#))}

**WARNING**

~~1. Pending reorganisation, see provisionally also **H01L 24/822** 2. Pending reorganisation, subgroups of this group Groups [H01L 24/18](#) – [H01L 24/25](#) are not complete; see also this group incomplete pending reclassification of documents from groups [H01L 24/18](#) and [H01L 24/82](#). Pending reorganisation, subgroups of this group are not complete; see also this group Groups [H01L 24/18](#) – [H01L 24/25](#) and [H01L 24/82](#) should be considered in order to perform a complete search.~~

M H01L 24/34

- {Strap connectors, e.g. copper straps for grounding power devices; Manufacturing methods related thereto}

**WARNING**

~~1. Pending reorganisation see provisionally also Groups [H01L 24/34](#) – [H01L 24/41](#) are incomplete pending reclassification of documents from groups [H01L 24/34](#), [H01L 24/01](#), [H01L 24/42](#), and [H01L 24/85](#) 2. Pending reorganisation Groups [H01L 24/34](#) – [H01L 24/41](#) and [H01L 24/01](#), subgroups of this group are not complete; see also this group [H01L 24/42](#), [H01L 24/85](#) should be considered in order to perform a complete search.~~

U H01L 24/42

- {Wire connectors; Manufacturing methods related thereto}

M H01L 24/43

- • {Manufacturing methods}

**WARNING**

~~H01L 21/4885 and subgroups, H01L 24/42, H01L 24/85~~

*Group [H01L 24/43](#) is incomplete pending reclassification of documents from groups [H01L 21/4885](#) and [H01L 24/42](#), [H01L 24/85](#).*

*Groups [H01L 24/43](#) and [H01L 21/4885](#), [H01L 24/42](#), [H01L 24/85](#) should be considered in order to perform a complete search.*

- |   |            |   |
|---|------------|---|
| M | H01L 24/44 | <ul style="list-style-type: none"> <li>• • • {Structure, shape, material or disposition of the wire connectors prior to the connecting process}</li> </ul> <p><u>WARNING</u><br/><del>H01L 24/42, H01L 24/85</del></p> <p><i>Group <a href="#">H01L 24/44</a> is incomplete pending reclassification of documents from groups <a href="#">H01L 24/42</a> and <a href="#">H01L 24/85</a>.<br/>Groups <a href="#">H01L 24/44</a> and <a href="#">H01L 24/42</a>, <a href="#">H01L 24/85</a> should be considered in order to perform a complete search.</i></p>   |
| M | H01L 24/47 | <ul style="list-style-type: none"> <li>• • • {Structure, shape, material or disposition of the wire connectors after the connecting process}</li> </ul> <p><u>WARNING</u><br/><del>H01L 24/42, H01L 24/85</del> }</p> <p><i>Group <a href="#">H01L 24/47</a> is incomplete pending reclassification of documents from groups <a href="#">H01L 24/42</a> and <a href="#">H01L 24/85</a>.<br/>Groups <a href="#">H01L 24/47</a> and <a href="#">H01L 24/42</a>, <a href="#">H01L 24/85</a> should be considered in order to perform a complete search.</i></p>  |
| M | H01L 24/48 | <ul style="list-style-type: none"> <li>• • • • {of an individual wire connector}</li> </ul> <p><u>WARNING</u><br/><del>H01L 24/42, H01L 24/85</del></p>   |
| M | H01L 24/49 | <ul style="list-style-type: none"> <li>• • • • {of a plurality of wire connectors}</li> </ul> <p><u>WARNING</u><br/><del>H01L 24/42, H01L 24/85</del> }</p>   |
| M | H01L 24/50 | <ul style="list-style-type: none"> <li>• • {Tape automated bonding [TAB] connectors, i.e. film carriers; Manufacturing methods related thereto (thin flexible metallic tape with or without a film carrier <a href="#">H01L 23/49572</a>, flexible insulating substrates <a href="#">H01L 23/4985</a>, <a href="#">H01L 23/5387</a>)}</li> </ul> <p><u>WARNING</u><br/><del>H01L 24/86</del></p> <p><i>Group <a href="#">H01L 24/50</a> is incomplete pending reclassification of documents from group <a href="#">H01L 24/86</a>.<br/>Groups <a href="#">H01L 24/50</a> and <a href="#">H01L 24/86</a> should be considered in order to perform a complete search.</i></p> |
| M | H01L 24/80 | <ul style="list-style-type: none"> <li>• {Methods for connecting semiconductor or other solid state bodies using means for bonding being attached to, or being formed on, the surface to be connected}</li> </ul> <p><u>WARNING</u><br/>1. Pending reorganisation see provisionally also <b>H01L21/60</b> 2. Subgroups of this group are not complete; see also this group and the other subgroups</p>  |
| M | H01L 24/84 | <ul style="list-style-type: none"> <li>• • {using a strap connector}</li> </ul> <p><u>WARNING</u><br/><del>H01L 24/85</del></p> <p><i>Group <a href="#">H01L 24/84</a> is incomplete pending reclassification of documents from group <a href="#">H01L 24/85</a>.<br/>Group <a href="#">H01L 24/84</a> and <a href="#">H01L 24/85</a> should be considered in order to perform a complete search.</i></p>   |

M	H01L 24/90	<ul style="list-style-type: none"> <li>• {Methods for connecting semiconductor or solid state bodies using means for bonding not being attached to, or not being formed on, the body surface to be connected, e.g. pressure contacts using springs or clips}</li> </ul> <p><b>WARNING</b> <b>H01L21/60E</b></p>
M	H01L 24/93	<ul style="list-style-type: none"> <li>• {Batch processes}</li> </ul> <p><b>WARNING</b> <b>H01L 24/80 and subgroups and H01L 24/90</b></p> <p><i>Group H01L 24/93 is incomplete pending reclassification of documents from groups H01L 24/80 – H01L 24/90. Groups H01L 24/93 and H01L 24/80 – H01L 24/90 should be considered in order to perform a complete search.</i></p>
U	H01L 27/00	<p><b>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 <a href="#">H01L 21/70</a>, <a href="#">H01L 31/00</a> to <a href="#">H01L 51/00</a>; details thereof <a href="#">H01L 23/00</a>, <a href="#">H01L 29/00</a> to <a href="#">H01L 51/00</a>; assemblies consisting of a plurality of individual solid state devices <a href="#">H01L 25/00</a>; assemblies of electrical components in general <a href="#">H05K</a>)</b></p> <p><b>NOTE</b> In this group, in the absence of an indication to the contrary, classification is made in the last appropriate place.</p>
U	H01L 27/02	<ul style="list-style-type: none"> <li>• 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</li> </ul>
U	H01L 27/04	<ul style="list-style-type: none"> <li>• • the substrate being a semiconductor body</li> </ul>
U	H01L 27/10	<ul style="list-style-type: none"> <li>• • • including a plurality of individual components in a repetitive configuration</li> </ul>
U	H01L 27/105	<ul style="list-style-type: none"> <li>• • • • including field-effect components</li> </ul> <p><b>NOTE</b> In this group and its subgroups classification is made in any appropriate place</p>
U	H01L 27/108	<ul style="list-style-type: none"> <li>• • • • Dynamic random access memory structures (circuits <a href="#">G11C 11/24</a>, <a href="#">G11C 11/34</a>)</li> </ul> <p><b>NOTE</b> In this group and its subgroups classification is made in any appropriate place</p>
U	H01L 27/10805	<ul style="list-style-type: none"> <li>• • • • • {with one-transistor one-capacitor memory cells}</li> </ul>
M	H01L 27/10826	<ul style="list-style-type: none"> <li>• • • • • {the transistor being of the FinFET type}</li> </ul> <p><b>WARNING</b> <b>not complete pending completion of reclassification; see also H01L 27/10823</b></p>
U	H01L 27/10844	<ul style="list-style-type: none"> <li>• • • • • {Multistep manufacturing methods}</li> </ul>

M	H01L 27/10847	. . . . . {for structures comprising one transistor one-capacitor memory cells}	<u>WARNING</u> not complete pending completion of reclassification; see also H01L 27/10844
U	H01L 27/10873	. . . . . {with at least one step of making the transistor (making the transistor per se <a href="#">H01L 29/66409</a> )}	
M	H01L 27/10879	. . . . . {the transistor being of the FinFET type}	<u>WARNING</u> not complete pending completion of reclassification; see also H01L 27/10876
U	H01L 27/11	. . . . . Static random access memory structures {and multistep manufacturing processes therefor (circuits <a href="#">G11C 11/40</a> )}	
M	H01L 27/1116	. . . . . {Peripheral circuit region}	<u>WARNING</u> not complete, pending reorganisation; see provisionally also H01L 27/105
U	H01L 27/112	. . . . . Read-only memory structures {[ROM] and multistep manufacturing processes therefor}	
M	H01L 27/11286	. . . . . {Peripheral circuit regions}	<u>WARNING</u> not complete pending reorganisation; see provisionally also H01L 27/105
U	H01L 27/115	. . . . . Electrically programmable read-only memories {and multistep manufacturing processes therefor}	
U	H01L 27/11502	. . . . . {with ferroelectric memory capacitor}	
M	H01L 27/11504	. . . . . {Top-view layout}	<u>WARNING</u> Not complete; see H01L 27/11502
M	H01L 27/11512	. . . . . {Boundary region between core and peripheral circuit region}	<u>WARNING</u> Not complete; see H01L 27/11502
M	H01L 27/11514	. . . . . {Three-dimensional arrangements, e.g. cells on different height levels}	<u>WARNING</u> Not complete; see H01L 27/11502
M	H01L 27/11517	. . . . . {with floating gate}	<u>WARNING</u> Group H01L 27/11517 and subgroups are not complete pending reorganisation. See also H01L 27/115
U	H01L 27/11551	. . . . . {Three-dimensional arrangements, e.g. cells on different height levels}	
U	H01L 27/11553	. . . . . {with source and drain on different levels, e.g. with sloping channel}	



M	H01L 27/11556	. . . . . {the channel comprising at least one vertical portion, e.g. U-shaped channel}	<u>WARNING</u> not complete pending reorganisation, see provisionally also H01L 27/11551
U	H01L 27/11563	. . . . . {with charge trapping gate insulator, e.g. MNOS, NROM}	
M	H01L 27/11565	. . . . . {Top-view layout}	<u>WARNING</u> Not complete, see H01L 27/115
M	H01L 27/11575	. . . . . {Boundary region between core and peripheral circuit region}	<u>WARNING</u> Not complete, see H01L 27/115
M	H01L 27/11578	. . . . . {Three-dimensional arrangements, e.g. cells on different height levels}	<u>WARNING</u> Not complete, see H01L 27/115
U	H01L 27/1158	. . . . . {with source and drain on different levels, e.g. with sloping channel}	
M	H01L 27/11582	. . . . . {the channel comprising at least one vertical portion, e.g. U-shaped channel}	<u>WARNING</u> not complete pending reorganisation, see provisionally also H01L 27/11578
U	H01L 27/11585	. . . . . {with gate electrode comprising a layer which is used for its ferroelectric memory properties, e.g. MFS (metal-ferroelectric-semiconductor), MFMIS (metal-ferroelectric-metal-insulator-semiconductor)}	
M	H01L 27/11587	. . . . . {Top-view layout}	<u>WARNING</u> Not complete, see H01L 27/11585
M	H01L 27/11595	. . . . . {Boundary region between core and peripheral circuit region}	<u>WARNING</u> Not complete, see H01L 27/11585
M	H01L 27/11597	. . . . . {Three-dimensional arrangements, e.g. cells on different height levels}	<u>WARNING</u> Not complete, see H01L 27/11585
U	H01L 27/12	. . the substrate being other than a semiconductor body, e.g. an insulating body	
M	H01L 27/1214	. . . {comprising a plurality of TFTs formed on a non-semiconducting substrate, e.g. driving circuits for AMLCDs}	<u>WARNING</u> Subgroups Group H01L 27/1218 – H01L 27/1296 are incomplete pending reclassification of documents from group H01L 27/1214 are not complete, pending reorganisation; see provisionally also this group.

*Groups H01L 27/1218 – H01L 27/1296 and H01L 27/1214 should be considered in order to perform a complete search.*

- M H01L 27/24
- including solid state components for rectifying, amplifying or switching without a potential-jump barrier or surface barrier, {e.g. resistance switching non-volatile memory structures}

**WARNING**

Groups H01L 27/2409 to H01L 27/249 are not complete pending reclassification; see provisionally also group H01L 27/24

- U H01L 27/28
- including components using organic materials as the active part, or using a combination of organic materials with other materials as the active part
- U H01L 27/32
- with components specially adapted for light emission, e.g. flat-panel displays using organic light-emitting diodes [OLED] {(combination of organic light sensitive components with organic light emitting components, e.g. optocoupler H01L 27/288)}
- U H01L 27/3206
- {Multi-colour light emission}
- M H01L 27/3211
- {using RGB sub-pixels}

**WARNING**

The subgroups Groups H01L 27/3213 – H01L 27/3218 are incomplete pending reclassification of documents from group H01L 27/3211 are not complete pending.

Groups H01L 27/3213 – H01L 27/3218 and H01L 27/3211 should be considered in order to perform a reorganization, see provisionally also this group complete search.

- U H01L 29/00
- Semiconductor devices adapted for rectifying, amplifying, oscillating or switching, or capacitors or resistors with at least one potential-jump barrier or surface barrier, e.g. PN junction depletion layer or carrier concentration layer; Details of semiconductor bodies or of electrodes thereof; {Multistep manufacturing processes therefor} (H01L 31/00 - H01L 47/00, H01L 51/05 take precedence; processes or apparatus adapted for the manufacture or treatment thereof or of parts thereof H01L 21/00; details other than of semiconductor bodies or of electrodes thereof H01L 23/00; devices consisting of a plurality of solid state components formed in or on a common substrate H01L 27/00; {passive two-terminal components without a potential-jump or surface barrier for integrated circuits, details thereof and multistep manufacturing processes therefor H01L 28/00; } resistors in general H01C; capacitors in general H01G, {e.g. ceramic barrier-layer capacitors H01G 4/1272})

**NOTE**

In this main group, classification is made both in groups H01L 29/02 to H01L 29/51 and in groups H01L 29/66 to H01L 29/94 if both of these sets of groups are relevant.

- U H01L 29/02
- Semiconductor bodies; {Multistep manufacturing processes therefor}
- U H01L 29/06
- characterised by their shape; characterised by the shapes, relative sizes, or dispositions of the semiconductor regions; {characterised by the concentration or distribution of impurities within semiconductor regions}
- U H01L 29/08
- with semiconductor regions connected to an electrode carrying current to be rectified, amplified or switched and such electrode being part of a semiconductor device which comprises three or more electrodes
- U H01L 29/0843
- {Source or drain regions of field-effect devices}

- U H01L 29/0847 . . . . {of field-effect transistors with insulated gate ([H01L 29/0653](#) takes precedence; with a passive supplementary region between source or drain and substrate related to punch-through, capacity or isolation phenomena [H01L 29/1079](#); with LDD or DDD structure [H01L 29/7833](#); for thin film transistors [H01L 29/78618](#))}
- M H01L 29/0852 . . . . {of DMOS transistors}
- WARNING  
~~This group and subgroups thereof are not complete, see provisionally also Groups [H01L 29/0852](#) – [H01L 29/0886](#) are incomplete pending reclassification of documents from group [H01L 29/0847](#) and [H01L 29/7801](#) and subgroups thereof.~~  
[Groups \[H01L 29/0852\]\(#\) – \[H01L 29/0886\]\(#\) and \[H01L 29/0847\]\(#\), \[H01L 29/7801\]\(#\) should be considered in order to perform a complete search.](#)
- U H01L 29/40 . Electrodes; {Multistep manufacturing processes therefor}
- M H01L 29/401 . {Multistep manufacturing processes}
- WARNING  
~~H01L 21/28026 and subgroups~~
- U H01L 29/41 . . characterised by their shape, relative sizes or dispositions
- U H01L 29/423 . . . not carrying the current to be rectified, amplified or switched
- U H01L 29/42312 . . . . {Gate electrodes for field effect devices}
- U H01L 29/42316 . . . . {for field-effect transistors}
- U H01L 29/4232 . . . . . {with insulated gate}
- M H01L 29/42356 . . . . . {Disposition, e.g. buried gate electrode ([H01L 29/42324](#) and [H01L 29/4234](#) take precedence)}
- WARNING  
~~This group and subgroup thereof are not complete, see provisionally also [H01L 29/78](#), [H01L 29/7801](#) and subgroups thereof, [H01L 29/7827](#) and [H01L 29/7834](#)~~
- U H01L 29/43 . . characterised by the materials of which they are formed
- U H01L 29/49 . . . Metal-insulator-semiconductor electrodes, {e.g. gates of MOSFET ([H01L 29/435](#) takes precedence)}
- NOTE  
This group covers also devices using any other conductor material in place of metal
- U H01L 29/4983 . . . {with a lateral structure, e.g. a Polysilicon gate with a lateral doping variation or with a lateral composition variation or characterised by the sidewalls being composed of conductive, resistive or dielectric material}
- M H01L 29/4991 . . . . {comprising an air gap}
- WARNING  
~~Not complete, see provisionally also Group [H01L 29/4991](#) is incomplete pending reclassification of documents from group [H01L 29/4983](#).~~  
[Groups \[H01L 29/4991\]\(#\) and \[H01L 29/4983\]\(#\) should be considered in order to perform a complete search.](#)
- U H01L 29/66 . Types of semiconductor device; {Multistep manufacturing processes therefor}
- U H01L 29/66007 . . {Multistep manufacturing processes}

- U H01L 29/66075 . . . {of devices having semiconductor bodies comprising group 14 or group 13/15 materials (comprising semiconducting carbon [H01L 29/66015](#); comprising crystalline silicon carbide [H01L 29/66053](#))}
- U H01L 29/66227 . . . {the devices being controllable only by the electric current supplied or the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched, e.g. three-terminal devices}
- U H01L 29/66409 . . . {Unipolar field-effect transistors}
- U H01L 29/66477 . . . {with an insulated gate, i.e. MISFET}
- U H01L 29/66674 . . . {DMOS transistors, i.e. MISFETs with a channel accommodating body or base region adjoining a drain drift region (making lateral high-voltage MISFETs with channel well and drain offset region [H01L 29/66659](#))}
- M H01L 29/66681 . . . {Lateral DMOS transistors, i.e. LDMOS transistors}
- WARNING**  
**H01L 29/66674**
- U H01L 29/66712 . . . {Vertical DMOS transistors, i.e. VDMOS transistors}
- M H01L 29/66719 . . . {With a step of forming an insulating sidewall spacer}
- WARNING**  
**H01L 29/66712**
- U H01L 29/68 . . controllable by only the electric current supplied, or only the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched
- U H01L 29/76 . . . Unipolar devices, {e.g. field effect transistors}
- U H01L 29/778 . . . with two-dimensional charge carrier gas channel, e.g. HEMT; {with two-dimensional charge-carrier layer formed at a heterojunction interface ([H01L 29/803](#) takes precedence)}
- U H01L 29/78 . . . with field effect produced by an insulated gate {([H01L 29/7725](#), [H01L 29/775](#), [H01L 29/778](#) take precedence)}
- U H01L 29/7801 . . . {DMOS transistors, i.e. MISFETs with a channel accommodating body or base region adjoining a drain drift region (lateral high-voltage MISFETs with channel well and drain offset region [H01L 29/7835](#))}
- U H01L 29/7802 . . . {Vertical DMOS transistors, i.e. VDMOS transistors}
- M H01L 29/7803 . . . {structurally associated with at least one other device (assemblies [H01L 25/00](#); integrated circuits [H01L 27/00](#))}
- WARNING**  
**This group and subgroups thereof are not complete, see provisionally also Groups [H01L 29/7803](#) – [H01L 29/7808](#) are incomplete pending reclassification of documents from group [H01L 29/7802](#). Groups [H01L 29/7803](#) – [H01L 29/7808](#) and [H01L 29/7802](#) should be considered in order to perform a complete search.**
- M H01L 29/7811 . . . {with an edge termination structure (guard regions per se [H01L 29/0619](#); field plates per se [H01L 29/402](#))}
- WARNING**  
**This group [Group H01L 29/7811](#) is not complete, see provisionally also incomplete pending reclassification of documents from group [H01L 29/7802](#), [H01L 29/7809](#) and [H01L 29/7813](#). Groups [H01L 29/7811](#) and [H01L 29/7802](#) should be considered in order to perform a complete search.**

- M H01L 29/7815 . . . . . {with voltage or current sensing structure, e.g. emulator section, overcurrent sensing cell}
- WARNING  
 This group *Group H01L 29/7815* is not complete, see provisionally also *incomplete pending reclassification of documents from group H01L 29/7802, H01L 29/7809 and H01L 29/7813*  
*Groups H01L 29/7815 and H01L 29/7802 should be considered in order to perform a complete search.*
- M H01L 29/7816 . . . . . {Lateral DMOS transistors, i.e. LDMOS transistors}
- WARNING  
 This group and subgroups thereof are not complete, see provisionally also H01L 29/7801
- U H01L 29/7827 . . . . . {Vertical transistors ([H01L 29/7802](#), [H01L 29/78642](#) take precedence)}
- M H01L 29/7828 . . . . . {without inversion channel, e.g. vertical ACCUFETs, normally-on vertical MISFETs}
- WARNING  
 This group is not complete, see provisionally also H01L 29/7827

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

- H01L 29/7833 . . . . . {with lightly doped drain or source extension, e.g. LDD ~~MOSFET's~~ *MOSFET's*; DDD ~~MOSFET's~~ *MOSFET's* (for thin film transistors [H01L 29/78618](#))}

**Project: MP0117 (H01L)**

- M H01L 29/7842 . . . . . {means for exerting mechanical stress on the crystal lattice of the channel region, e.g. using a flexible substrate (variation of the composition of the channel [H01L 29/1054](#))}
- WARNING  
 The groups H01L 29/7843 to H01L 29/7849 are not complete, see provisionally also H01L 29/7842

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

- U H01L 29/80 . . . . . with field effect produced by a PN or other rectifying junction gate, {i.e. potential-jump barrier}
- U H01L 29/808 . . . . . with a PN junction gate, {e.g. PN homojunction gate ([H01L 29/7725](#), [H01L 29/775](#), [H01L 29/778](#), [H01L 29/806](#) take precedence)}
- H01L 29/8086 . . . . . {Thin film ~~JFET's~~ *JFET's*}
- U H01L 29/812 . . . . . with a Schottky gate {([H01L 29/7725](#), [H01L 29/775](#), [H01L 29/778](#), [H01L 29/806](#) take precedence; with Schottky contact on top of heterojunction gate [H01L 29/802](#))}
- H01L 29/8126 . . . . . {Thin film ~~MESFET's~~ *MESFET's*}

- 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 31/04** • adapted as photovoltaic [PV] conversion devices, e.g. PV modules or single PV cells (testing thereof during manufacture {[H01L 22/00](#)}; testing thereof after manufacture [H02S 50/10](#))
- U H01L 31/052** • • Cooling means directly associated or integrated with the PV cell, e.g. integrated Peltier elements for active cooling or heat sinks directly associated with the PV cells (cooling means in combination with the PV module [H02S 40/42](#))
- H01L 31/0525** • • {including means to utilise heat energy directly associated with the PV cell, e.g. integrated Seebeck elements}

**Project: MP0117 (H01L)**

- M H01L 31/06** • • characterised by at least one potential-jump barrier or surface barrier

**NOTE**

Groups H01L 31/061 to H01L 31/078 are based on IPC2012.01]

**Project: MP0123 (H01L)**

- M H01L 41/00** Piezo-electric devices in general; Electrostrictive devices in general; Magnetostrictive devices in general; Processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof; Details thereof (devices consisting of a plurality of solid-state components formed in or on a common substrate [H01L 27/00](#))

**WARNING**

1. Groups H01L 41/22 - H01L 41/47 correspond to IPC2013.01. Concordance CPC : IPC for these groups is as follows: - H01L 41/22 - H01L 41/37 : H01L 41/22 - H01L 41/39 - H01L 41/43 : H01L 41/24 - H01L 41/45 : H01L 41/26 - H01L 41/47 : H01L 41/22

2. 1. Pending reorganisation, the groups Groups [H01L 41/23 to -H01L 41/47](#) are not complete; see provisionally also incomplete pending reclassification of documents from group [H01L 41/22](#).  
Groups [H01L 41/23-H01L 41/47](#) and [H01L 41/22](#) should be considered in order to perform a complete search.

**Project: MP0117 (H01L)**

- U H01L 41/02** • Details
- U H01L 41/04** • • of piezo-electric or electrostrictive devices

M	H01L 41/047	<ul style="list-style-type: none"> <li>• • • Electrodes {or electrical connection arrangements}</li> </ul> <p><u>WARNING</u> Pending reorganisation, the groups H01L 41/0471 to H01L 41/0477 are not complete, see provisionally also H01L 41/047</p>
M	H01L 41/053	<ul style="list-style-type: none"> <li>• • • Mounts, supports, enclosures or casings</li> </ul> <p><u>WARNING</u> Pending reorganisation, the groups H01L 41/0533 to H01L 41/0536 are not complete, see provisionally also H01L 41/053</p>
M	H01L 41/08	<ul style="list-style-type: none"> <li>• Piezo-electric or electrostrictive devices</li> </ul> <p><u>WARNING</u> Pending reorganisation, the groups H01L 41/0805, H01L 41/082, and H01L 41/0825 are not complete, see provisionally also H01L 41/08</p>
M	H01L 41/083	<ul style="list-style-type: none"> <li>• • having a stacked or multilayer structure</li> </ul> <p><u>WARNING</u> Pending reorganisation, the groups H01L 41/0831 to H01L 41/0838 are not complete, see provisionally also H01L 41/083</p>
U	H01L 41/09	<ul style="list-style-type: none"> <li>• • {with electrical input and mechanical output e.g. actuators, vibrators}{in frequency selective networks <a href="#">H03H 9/00</a>}</li> </ul>
M	H01L 41/0906	<ul style="list-style-type: none"> <li>• • • {using longitudinal or thickness displacement combined with bending, shear or torsion displacement}</li> </ul> <p><u>WARNING</u> Pending reorganisation, the groups H01L 41/0913 to H01L 41/092 are not complete, see provisionally also H01L 41/0906</p>
M	H01L 41/0926	<ul style="list-style-type: none"> <li>• • • {using bending displacement, e.g. unimorph, bimorph or multimorph cantilever or membrane benders}</li> </ul> <p><u>WARNING</u> Pending reorganisation, the groups H01L 41/0933 to H01L 41/098 are not complete, see provisionally also H01L 41/0926</p>
M	H01L 41/0986	<ul style="list-style-type: none"> <li>• • • {using longitudinal or thickness displacement only, e.g. d33 or d31 type devices}</li> </ul> <p><u>WARNING</u> Pending reorganisation, this group is not complete, see provisionally also H01L 41/09</p>
M	H01L 41/0993	<ul style="list-style-type: none"> <li>• • • {using shear or torsion displacement, e.g. d15 type devices}</li> </ul> <p><u>WARNING</u> Pending reorganisation, this group is not complete, see provisionally also H01L 41/09</p>
M	H01L 41/113	<ul style="list-style-type: none"> <li>• • with mechanical input and electrical output {e.g. generators, sensors}</li> </ul> <p><u>WARNING</u> Pending reorganisation, the groups H01L 41/113 to H01L 41/1138 are not complete, see provisionally also H01L 41/113 and H02N 2/18</p>
U	H01L 41/16	<ul style="list-style-type: none"> <li>• Selection of materials</li> </ul>
U	H01L 41/18	<ul style="list-style-type: none"> <li>• • for piezo-electric or electrostrictive devices {e.g. bulk piezo-electric crystals}</li> </ul>



- M H01L 41/183
- • {Composite materials, e.g. having 1-3 or 2-2 type connectivity}
- WARNING**  
Pending reorganisation, this group is not complete, see provisionally also H01L 41/18

- M H01L 41/187
- • Ceramic compositions {i.e. synthetic inorganic polycrystalline compounds incl. epitaxial, quasi-crystalline materials}
- WARNING**  
Pending reorganisation, the groups H01L 41/1871 to H01L 41/1878 are not complete, see provisionally also H01L 41/187 }

## Project: MP0117, MP0123 (H01L)

- M H01L 45/00
- Solid state devices adapted for rectifying, amplifying, oscillating or switching without a potential-jump barrier or surface barrier, e.g. dielectric triodes; Ovshinsky-effect devices; Processes or apparatus peculiar to the manufacture or treatment thereof or of parts thereof (devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#); devices using superconductivity [H01L 39/00](#); piezo-electric devices [H01L 41/00](#); bulk negative resistance effect devices [H01L 47/00](#); {memories [G11C 11/34](#); [G11C 13/0002](#); amplifying circuits [H03F 11/00](#); pulse generation [H03K 3/02](#); electronic switching circuits [H03K 17/00](#); logic circuits [H03K 19/00](#)))

**WARNING**

Groups H01L 45/04 - H01L 45/16 do not correspond to former or current IPC groups. IPC concordance of said groups is - H01L 45/04 - H01L 45/16 : H01L 45/00. Groups H01L 45/06 to H01L 45/1691 are not complete pending reclassification; see provisionally also group H01L 45/04

## Project: MP0117 (H01L)

- U H01L 51/00
- Solid state devices using organic materials as the active part, or using a combination of organic materials with other materials as the active part; Processes or apparatus specially adapted for the manufacture or treatment of such devices, or of parts thereof (devices consisting of a plurality of components formed in or on a common substrate [H01L 27/28](#); thermoelectric devices using organic material [H01L 35/00](#), [H01L 37/00](#); piezoelectric, electrostrictive or magnetostrictive elements using organic material [H01L 41/00](#))
- U H01L 51/50
- specially adapted for light emission, e.g. organic light emitting diodes [OLED] or polymer light emitting devices [PLED]; (organic semiconductor lasers [H01S 5/36](#); {circuit arrangements for OLED or PLED [H05B 33/0896](#); control arrangements for organic electroluminescent displays [G09G 3/3208](#)})
- U H01L 51/52
- • Details of devices
- U H01L 51/5203
- • • {Electrodes}
- M H01L 51/5206
- • • • {Anodes, i.e. with high work-function material}

**WARNING**

The subgroups Groups [H01L 51/5209](#) – [H01L 51/5218](#) are incomplete pending reclassification of documents from group [H01L 51/5206](#) are not complete pending.

Groups [H01L 51/5209](#) – [H01L 51/5218](#) and [H01L 51/5206](#) should be considered in order to perform a reorganisation, see provisionally also this group complete search.

- M H01L 51/5221 . . . {Cathodes, i.e. with low work-function material}
- WARNING  
*The subgroups Groups H01L 51/5225 – H01L 51/5234 are incomplete pending reclassification of documents from group H01L 51/5221 are not complete pending.*  
*Groups H01L 51/5225 – H01L 51/5234 and H01L 51/5221 should be considered in order to perform a reorganisation, see provisionally also this group complete search.*
- M H01L 51/5237 . . . {Passivation; Containers; Encapsulation, e.g. against humidity}
- WARNING  
*The subgroups Groups H01L 51/524 – H01L 51/5259 are incomplete pending reclassification of documents from group H01L 51/5237 are not complete pending.*  
*Groups H01L 51/524 – H01L 51/5259 and H01L 51/5237 should be considered in order to perform a reorganisation, see provisionally also this group complete search.*

**Project: MP0124 (H01L)**

- U H01L 2224/00 Indexing scheme for arrangements for connecting or disconnecting semiconductor or solid-state bodies and methods related thereto as covered by H01L 24/00**
- U H01L 2224/01 . Means for bonding being attached to, or being formed on, the surface to be connected, e.g. chip-to-package, die-attach, "first-level" interconnects; Manufacturing methods related thereto
- U H01L 2224/02 . . Bonding areas; Manufacturing methods related thereto
- U H01L 2224/03 . . . Manufacturing methods
- U H01L 2224/033 . . . . by local deposition of the material of the bonding area
- U H01L 2224/0331 . . . . . in liquid form
- M H01L 2224/03312 . . . . . Continuous flow, e.g. using a micro-syringe, a pump, a *nozzle* *nozzle* or extrusion
- U H01L 2224/10 . . Bump connectors; Manufacturing methods related thereto
- U H01L 2224/11 . . . Manufacturing methods
- U H01L 2224/113 . . . . by local deposition of the material of the bump connector
- U H01L 2224/1131 . . . . . in liquid form
- M H01L 2224/11312 . . . . . Continuous flow, e.g. using a micro-syringe, a pump, a *nozzle* *nozzle* or extrusion
- U H01L 2224/26 . . Layer connectors, e.g. plate connectors, solder or adhesive layers; Manufacturing methods related thereto
- U H01L 2224/27 . . . Manufacturing methods
- U H01L 2224/273 . . . . by local deposition of the material of the layer connector
- U H01L 2224/2731 . . . . . in liquid form
- M H01L 2224/27312 . . . . . Continuous flow, e.g. using a micro-syringe, a pump, a *nozzle* *nozzle* or extrusion
- U H01L 2224/80 . Methods for connecting semiconductor or other solid state bodies using means for bonding being attached to, or being formed on, the surface to be connected
- U H01L 2224/82 . . by forming build-up interconnects at chip-level, e.g. for high density interconnects [HDI]
- U H01L 2224/821 . . . Forming a build-up interconnect
- M H01L 2224/82106 . . . . by *subtractive* *subtractive* methods

**Project: N/A (H01R)**

- U H01R 4/00** Electrically-conductive connections between two or more conductive members in direct contact and means for effecting or maintaining such contact (details of disengageable contacts of two-part coupling devices [H01R 13/00](#); two-part coupling devices [H01R 12/70](#), [H01R 24/00](#) - [H01R 33/00](#); flexible or turnable line connectors [H01R 35/00](#); non rotary current collectors [H01R 41/00](#))
- H01R 4/54      • {Bayonet or keyhole}

**Project: N/A (H02G)**

- U H02G 3/00** Installations of electric cables or lines in or on buildings, equivalent structures or vehicles (installations of bus-bars [H02G 5/00](#); overhead installations [H02G 7/00](#); installations in or on the ground [H02G 9/00](#); channels or vertical ducts for receiving utility lines [E04F 17/08](#); wiring of electric apparatus in general [H05K](#))
- H02G 3/26      • {Installations of cables, lines, or separate protective tubing therefor directly on or in walls, ceilings, or floors (by means of insulators [H02G 3/24](#); supports for pipes, cables or protective tubing [F16L 3/00](#); hose-clips [F16L 33/02](#))}
- H02G 3/28      • {Installations of cables, lines, or separate protective tubing therefor in conduits or ducts pre-established in walls, ceilings or floors}

**Project: MP0123 (H02G)**

- M H02G 13/00** Installations of lightning conductors; Fastening thereof to supporting structure (indicating, counting or recording lightning strokes [G01](#); lightning arrestors [H01C 7/12](#), [H01C 8/04](#), [H01G 9/18](#), [H01T](#); earth plates, pins or other contacts [H01R](#))

**WARNING**

Groups H02G 13/20 to H02G 13/80 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H02G 13/20 - H02G 13/80 : H02G 13/00

**Project: MP0124 (H02N)**

- M H02N 3/00** Generators in which ~~thermal~~**thermal** or kinetic energy is converted into electrical energy by ionisation of a fluid and removal of the charge therefrom (discharge tubes functioning as thermionic generators [H01J 45/00](#))

**Project: N/A (H02P)**

- U H02P 7/00** Arrangements for regulating or controlling the speed or torque of electric DC motors (starting [H02P 1/00](#); stopping or slowing [H02P 3/00](#); {synchronous motors or other dynamo-electric motors with electronic commutators in dependence on the rotor position [H02P 6/00](#); motors rotating step by step [H02P 8/00](#);} vector control [H02P 21/00](#))
- U H02P 7/06      • for regulating or controlling an individual dc dynamo-electric motor by varying field or armature current
- U H02P 7/18      • • by master control with auxiliary power
- H02P 7/348      • • • {for changing between series and parallel connections of motors}

- U H02P 25/00** Arrangements or methods for the control of AC motors characterised by the kind of AC motor or by structural details (starting [H02P 1/00](#); stopping or slowing [H02P 3/00](#); of two or more motors [H02P 5/00](#); of synchronous motors with electronic commutators [H02P 6/00](#); of DC motors [H02P 7/00](#); of stepping motors [H02P 8/00](#))

**NOTE**

When classifying in this group, it is desirable to also classify in groups [H02P 21/00](#), [H02P 23/00](#) or [H02P 27/00](#) if the control method or the kind of supply voltage are of interest.

- U H02P 25/02 . characterised by the kind of motor
- U H02P 25/10 . . Commutator motors, e.g. repulsion motors
- U H02P 25/14 . . . Universal motors ([H02P 25/12](#) takes precedence)
- H02P 25/145 . . . {whereby the speed is regulated by measuring the motor speed and comparing it with a given physical value, speed feedback}

**Project: N/A (H03D)**

- U H03D 1/00** Demodulation of amplitude-modulated oscillations ([H03D 5/00](#), [H03D 9/00](#), [H03D 11/00](#) take precedence)
- U H03D 1/22 . Homodyne or synchrodyne circuits {(receiver circuits [H04B 1/30](#))}
  - H03D 1/2272 . . {using ~~FET's~~FET's ([H03D 1/2209](#), [H03D 1/2245](#) and [H03D 1/2281](#) take precedence)}

**Project: N/A (H03F)**

- U H03F 1/00** Details of amplifiers with only discharge tubes, only semiconductor devices or only unspecified devices as amplifying elements
- U H03F 1/08 . Modification of amplifiers to reduce detrimental influences of internal impedances of amplifying elements (wide-band amplifiers with inter-stage coupling networks incorporating these impedances [H03F 1/42](#); eliminating transit-time effects in vacuum tubes [H01J 21/34](#))
  - U H03F 1/083 . . {in transistor amplifiers ([H03F 1/10](#) to [H03F 1/22](#) take precedence)}
  - H03F 1/086 . . . {with ~~FET's~~FET's}
  - U H03F 1/22 . . by use of cascode coupling, i.e. earthed cathode or emitter stage followed by earthed grid or base stage respectively
  - H03F 1/223 . . . {with ~~MOSFET's~~MOSFET's}
  - H03F 1/226 . . . {with junction-~~FET's~~FET's}
  - U H03F 3/00** Amplifiers with only discharge tubes or only semiconductor devices as amplifying elements
  - U H03F 3/04 . with semiconductor devices only (subsequent sub-groups take precedence)
  - U H03F 3/08 . . controlled by light
  - H03F 3/082 . . . {with ~~FET's~~FET's ([H03F 3/085](#) takes precedence)}
  - U H03F 3/16 . . with field-effect devices
  - H03F 3/165 . . . {with junction-~~FET's~~FET's}
  - U H03F 3/30 . Single-ended push-pull {[SEPP]} amplifiers {(single-ended sense amplifiers [G11C 7/067](#)); Phase-splitters therefor
  - U H03F 3/3001 . . {with field-effect transistors}
  - H03F 2003/3003 . . . {with ~~MOSFET's~~MOSFET's}
  - H03F 2003/3005 . . . {with junction-~~FET's~~FET's}

- H03F 3/3081
  - • {Duplicated single-ended push-pull arrangements, i.e. bridge circuits (~~using FET's H03F 3/3061~~ *using FET's H03F 3/3061*)}
- U H03F 3/34
  - Dc amplifiers in which all stages are dc-coupled ([H03F 3/45](#) takes precedence)
- U H03F 3/343
  - • with semiconductor devices only
- U H03F 3/345
  - • • with field-effect devices ([H03F 3/347](#) takes precedence)
- H03F 3/3455
  - • • • {with junction-~~FET's~~ *FET's*}
- U H03F 3/42
  - Amplifiers with two or more amplifying elements having their dc paths in series with the load, the control electrode of each element being excited by at least part of the input signal, e.g. so-called totem-pole amplifiers
- H03F 3/423
  - • {with ~~MOSFET's~~ *MOSFET's*}
- H03F 3/426
  - • {with junction-~~FET's~~ *FET's*}
- U H03F 3/60
  - Amplifiers in which coupling networks have distributed constants, e.g. with waveguide resonators ([H03F 3/54](#) takes precedence)
- H03F 3/601
  - • {using ~~FET's~~ *FET's*, e.g. GaAs ~~FET's~~ *FET's* ([H03F 3/607](#), [H03F 3/608](#) take precedence)}

WARNING  
Not complete, see also [H03F 3/16](#)
- U H03F 3/602
  - • {Combinations of several amplifiers}

WARNING  
Not complete, see also [H03F 3/68](#)
- H03F 3/604
  - • • {using ~~FET's~~ *FET's*}

WARNING  
Not complete, see also [H03F 3/16](#), [H03F 3/68](#)
- U H03F 3/605
  - • {Distributed amplifiers}

WARNING  
Not complete, see also [H03F 1/18](#)
- H03F 3/607
  - • • {using ~~FET's~~ *FET's*}

WARNING  
Not complete, see also [H03F 1/18](#)

**Project: N/A (H03H)**

- U H03H 9/00
  - Networks comprising electromechanical or electro-acoustic devices; Electromechanical resonators (making single crystals [C30B](#); selection of materials thereof [H01L](#); piezo-electric, electrostrictive or magnetostrictive devices per se [H01L 41/00](#); electromechanical transducers [H04R](#))**
- U H03H 9/02
  - Details
- U H03H 9/05
  - • Holders; Supports
- U H03H 9/10
  - • • Mounting in enclosures {(constructional combinations of enclosure with electromechanical and other electronic elements [H03H 9/0538](#))}
- U H03H 9/1064
  - • • • {for surface acoustic wave [SAW] devices}
- H03H 9/1092
  - • • • • {the enclosure being defined by a cover cap mounted on an element forming part of the surface acoustic wave [SAW] device on the side of the ~~IDT's~~ *IDT's*}

**Project: MP0123 (H03H)**

**M H03H 11/00**      **Networks using active elements**

**WARNING**

Group H03H 11/11 does not correspond to former or current IPC groups.  
Concordance CPC : IPC for these groups is as follows: -- H03H 11/11 --  
H03H 11/04

**Project: N/A (H03J)**

**U H03J 1/00**      **Details of adjusting, driving, indicating, or mechanical control arrangements for resonant circuits in general (machine elements in general [F16](#); coupling of knobs to shafts [F16D](#))**

- U H03J 1/02      • Indicating arrangements {(indicating correct tuning [H03J 3/12](#))}
- U H03J 1/04      • • with optical indicating means
- U H03J 1/045      • • • {Indication of the tuning band, the bandwidth, tone control, the channel number, the frequency, or the like}
- H03J 1/047      • • • • {using electronic means, e.g. [LED's](#) [LED's](#) (display of electronic variables in general [G01R 13/00](#), for discontinuous display [G01R 13/404](#))}

**Project: N/A (H03K)**

**U H03K 5/00**      **Manipulating pulses not covered by one of the other main groups in this subclass (circuits with regenerative action [H03K 3/00](#), [H03K 4/00](#); by the use of non-linear magnetic or dielectric devices [H03K 3/45](#))**

**NOTE**

In this group, the input signals are of the pulse type.

- U H03K 2005/00013      • {Delay, i.e. output pulse is delayed after input pulse and pulse length of output pulse is dependent on pulse length of input pulse}
- U H03K 2005/0015      • • {Layout of the delay element}
- H03K 2005/00195      • • • {using [FET's](#) [FET's](#)}
- H03K 2005/00215      • • • • {where the conduction path of multiple [FET's](#) [FET's](#) is in parallel or in series, all having the same gate control}
- H03K 2005/00221      • • • • {where the conduction path of the different output [FET's](#) [FET's](#) is connected in parallel with different gate control, e.g. having different sizes or thresholds, or coupled through different resistors}
- U H03K 2005/00234      • • • {using circuits having two logic levels}
- H03K 2005/0026      • • • • {using memories or [FIFO's](#) [FIFO's](#)}

**Project: MP0123 (H04B)**

**M H04B 10/00**      **Transmission systems employing electromagnetic waves other than radio-waves, e.g. infrared, visible or ultraviolet light, or employing corpuscular radiation, e.g. quantum communication**

**NOTE**

Groups [H04B 10/03](#), [H04B 10/07](#), [H04B 10/11](#), [H04B 10/25](#), [H04B 10/27](#), [H04B 10/29](#) and [H04B 10/40](#) to [H04B 10/90](#), and their subgroups are based on IPC2013.01

**WARNING**

Group H04B 10/2572 does not correspond to former or current IPC groups.  
Concordance CPC:IPC for this group is as follows: -- H04B 10/2572 --  
H04B 10/2507

**Project: N/A (H04B)**

- U H04B 10/12
- {Transmission through light guides, e.g. optical fibres ([H04B 10/25](#) takes precedence)}
- WARNING
- This group and its subgroups is no longer used for classification of new documents as from March 1, 2012. If not indicated differently for a particular subgroup, the backlog of its subgroups is being continuously reclassified to [H04B 10/25](#) - [H04B 10/2587](#)
- H04B 10/14
- • {Terminal stations}
- WARNING
- This group and its subgroups is no longer used for classification of new documents as from March 1, 2012. The backlog of this group and its subgroups is being continuously reclassified to [H04B 10/40](#) - [H04B 10/69](#)
- H04B 10/142
- • • {Coherent homodyne or heterodyne systems}
- H04B 10/152
- • • {Non-coherent direct-detection systems}
- H04B 10/22
- {Transmission between two stations which are mobile relative to each other}
- WARNING
- This group and its subgroup is no longer used for classification of new documents as from March 1, 2012. The backlog of this group and its subgroup is being continuously reclassified to [H04B 10/25](#) - [H04B 10/2587](#) and [H04B 10/70](#)
- H04B 10/30
- {Transmission systems employing beams of corpuscular radiation (arrangements for handling beams of corpuscular radiation, e.g. focusing, moderating, [G21K 1/00](#))}
- WARNING
- This group is no longer used for classification of new documents as from March 1, 2012. The backlog of this group and its subgroups is being continuously reclassified to [H04B 10/80](#) and [H04B 10/90](#)

**Project: MP0123 (H04K)**

- M H04K 3/00
- Jamming of communication; Counter-measures (counter-measures used in radar or analogous systems [G01S 7/00](#); {in radar [G01S 7/36](#), [G01S 7/38](#); in lidar [G01S 7/495](#); in sonar [G01S 7/537](#)})**
- NOTES
1. This group covers: "Jamming", only when it means purposefully trying to interfere with the physical transmission and reception of communication. Provided this condition is met, this group covers devices and methods for:
- jamming of communication:
    - jamming by intentionally decreasing the signal to noise ratio
    - deceptive jamming
    - passive jamming
    - destructive jamming
  - countermeasures against jamming
  - countermeasures against undesired self-jamming resulting from jamming
  - countermeasures against surveillance, interception or detection
  - other electronic countermeasures using or against electromagnetic or acoustic waves
  - signal detection techniques used in relation to
    - jamming: for interception and monitoring of the jamming target signal
    - anti-jamming: for jamming detection,
    - anti-surveillance: for surveillance detection



- g. jamming for testing or assessing countermeasures
  - h. jamming used to prevent:
    - cellular phone communication
      - i. in a vehicle during motion
      - ii. in particular areas, including prisons, hospitals, planes, petrol stations, theatres
      - iii. to trigger RCIEDs - reception of positioning data using GPS
    - wireless communication in ad hoc networks or in sensor networks
    - exchange of data between wirelessly connected devices or device units, on Bluetooth, infrared or near field links
    - unauthorized access to network, service or information, including:
      - i. access to a WLAN network
      - ii. access to information stored in contactless carriers, including RFID carriers
    - transmission of an alarm, against burglary or vehicle theft
    - remote control of devices
    - surveillance
      - i. of speech in meeting rooms
      - ii. of electromagnetic emissions from a computer screen
    - interception or detection of a wirelessly transmitted signal]
2. In this group, the following acronyms are used:  
GPS = global positioning system  
RCIED = remote controlled improvised explosive device  
RFID = radio frequency identification  
WLAN= wireless local area network

**WARNING**

Groups H04K 3/00-H04K 3/94 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows:-- H04K 3/00-H04K 3/94 : H04K 3/00

**Project: N/A (H04L)**

U H04L 12/00

**Data switching networks (interconnection of, or transfer of information or other signals between, memories, input/output devices or central processing units [G06F 13/00](#))**

U H04L 12/02

• Details

U H04L 12/24

• • Arrangements for maintenance or administration

**WARNING**

This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to subgroups of [H04L 41/00](#)

U H04L 12/2424

• • {Configuration management of network or network elements (management of devices network applications for proprietary or special purpose network environments [H04L 29/08567](#); automatic configuration in wireless networks [H04W 24/02](#))}

**WARNING**

This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to subgroups of [H04L 41/08](#)

H04L 12/2425

- • • • {Configuration setting of network or network elements}}

WARNING

This subgroup is no longer used for classification as from 01.05.2012.  
The backlog of this subgroup is being continuously reclassified to  
[H04L 41/0803](#)

**Project: MP0123 (H04L)****M H04L 41/00**

**{Arrangements for maintenance or administration or management of packet switching networks}**

WARNING

Groups H04L 41/00 - H04L 41/5096 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H04L 41/00 - H04L 41/5096 : H04L 12/24

**M H04L 43/00**

**{Arrangements for monitoring or testing packet switching networks (networking arrangements or communications protocols for supporting networked applications for tracking the activity of the application user [H04L 67/22](#); monitoring of computing systems [G06F 11/30](#); monitoring of computer activity [G06F 11/34](#))}**

WARNING

Groups H04L 43/00 - H04L 43/50 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H04L 43/00 - H04L 43/50 : H04L 12/26

**M H04L 45/00**

**{Routing or path finding of packets in data switching networks (specially adapted for wireless routing [H04W 40/00](#))}**

WARNING

Groups H04L 45/00 - H04L 45/74 do not correspond to former or current IPC groups. Concordance CPC : IPC for this groups is as follows: - H04L 45/00 - H04L 45/74 : H04L 12/56

**Project: N/A (H04L)**

H04L 45/66

- {Layer 2 routing, e.g. in Ethernet based ~~MAN's~~MAN's}

**Project: MP0123 (H04L)****M H04L 47/00**

**{Traffic regulation in packet switching networks (arrangements for detecting or correcting errors in the information received [H04L 1/00](#))}**

NOTE

This group covers:

1. Flow control or congestion control
2. Queue scheduling
3. Admission control or resource allocation

WARNING

Groups H04L 47/00 - H04L 47/829 do not correspond to former or current IPC groups.  
Concordance CPC : IPC for this groups is as follows: -  
- H04L 47/00 - H04L 47/829 : H04L 12/56

- M H04L 49/00** {Packet switching elements (selecting arrangements for multiplex arrangements using optical switching [H04Q 11/0001](#))}

**WARNING**

Groups H04L 49/00 - H04L 49/9057 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H04L 49/00 - H04L 49/9057 : H04L 12/56

- M H04L 51/00** {Arrangements for user-to-user messaging in packet-switching networks, e.g. e-mail or instant messages}

**WARNING**

Groups H04L 51/00 - H04L 51/38 do not correspond to former or current IPC groups.  
Concordance CPC : IPC for these groups is as follows:-  
- H04L 51/00 - H04L 51/38 : H04L 12/58

**Project: N/A (H04L)****H04L 61/00****{Network arrangements or network protocols for addressing or naming}****NOTE**

This group does not cover:

Aspects relating to switching or routing which are classified in [H04L 12/56](#). Aspects relating to configuration management of data networks or network elements in general which are classified in [H04L 12/2424](#). Aspects of addressing in telephony which are classified in [H04M 7/00](#). Aspects of addressing within devices, e.g. process or memory, which are classified in [G06F 13/42](#) or [G06F 12/00](#).

**WARNING**

~~Groups H04L 61/00 - H04L 61/6095 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - H04L 61/00 - H04L 61/6095 : H04L 61/6095 - H04L 61/6095 : H04L 29/12~~

**H04L 63/00**

**{Network architectures or network communication protocols for network security (cryptographic mechanisms or cryptographic arrangements for secret or secure communication [H04L 9/00](#); network architectures or network communication protocols for wireless network security [H04W 12/00](#); security arrangements for protecting computers or computer systems against unauthorised activity [G06F 21/00](#))}**

**WARNING**

[N: WARNING Groups H04L 63/00 - H04L 63/20 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows:- H04L 63/00 - H04L 63/20 : H04L 29/06

## Project: MP0123 (H04L)

M H04L 65/00

{Network arrangements or protocols for real-time communications (computer conference [H04L 12/1813](#); real time or near real time messaging in message switching systems e.g. instant messaging [H04L 12/581](#); television systems [H04N 7/00](#); selective video distribution [H04N 21/00](#); interconnection arrangements between switching centres for working between exchanges having different types of switching equipment where the types of switching equipment comprise PSTN/ISDN equipment and equipment of networks other than PSTN/ISDN [H04M 7/1205](#); systems providing special services to telephonic subscribers [H04M 3/42](#); network applications in general [H04L 67/00](#))}

## NOTES

1. {This group ~~covers~~[covers](#):
  - only communications which fulfill the following two conditions:
    - i. they are based on packet data;
    - ii. there is real-time or pseudo-real-time temporal association between source and destination, or source and network, or destination and network;
  - provided that the above two conditions are met, this group covers arrangements relating to
    - a. the transmission of the multimedia data itself,
    - b. the user-to-user, user-to-network, inter-network or intra-network signalling supporting:
      - b1. the establishment of a session for the subsequent transmission of the multimedia data, or
      - b2. the maintenance of the session or
      - b3. the application services available to the user during the session (unless explicitly excluded in certain cases).
2. {This group ~~does not cover~~[does not cover](#):
  - non-real-time multimedia file transfer, which is covered by [H04L 67/06](#)
  - multimedia store or forward messaging as in e-mail, MMS or the like, which is covered by [H04L 12/58](#)
  - analogue video streaming, as in analogue television systems, which is covered by [H04N 7/00](#)
  - selective distribution of MPEG elementary or transport streams, containing video and additional data, which is covered by [H04N 21/00](#)
  - bit streaming, i.e. not packet-based, as in ISDN which is covered by [H04Q 11/0428](#)
  - instant messaging, which is covered by [H04L 12/581](#)
  - any other multimodal data communications which do not meet the conditions of being packet-based and real-time or pseudo-real-time ~~flow control in packet switching networks, which is covered by H04L 12/569~~
  - [flow control in packet switching networks, which is covered by H04L 12/569](#).
3. {In this group the following terms or expressions are used with the meaning indicated:
  - H.323 means International Telecommunication Union Recommendation no. 323, series H, entitled "Packet-based multimedia communications systems"
  - IP means Internet Protocol
  - IMS means IP Multimedia Subsystem
  - ISDN means Integrated Services Digital Network
  - MGC means Media Gateway Control/Controller
  - MGCP means Media Gateway Control Protocol
  - MMS means Multimedia Messaging Service
  - PBX means Private Branch Exchange
  - PSTN means Public Switched Telephone Network

- QoS means Quality of Service
- RTP means Real Time Protocol
- RTCP means Real Time Control Protocol
- RTSP means Real Time Streaming Protocol.
- SIP means Session Initiation Protocol
- SPAM means unsolicited electronic mail
- SPIT means SPAM Prevention in IP Telephony

}

**WARNING**

Groups H04L 65/00 -- H04L 65/80 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: -- H04L 65/00 -- H04L 65/80 : H04L 29/06 }

**Project: N/A (H04L)**

**H04L 67/00**

{Network-specific arrangements or communication protocols supporting networked applications (message switching systems [H04L 51/00](#); network management protocols [H04L 41/00](#); routing or path finding of packets in data switching networks [H04L 45/00](#); protocols for real-time multimedia communication [H04L 65/00](#); information retrieval [G06F 17/30](#); services or facilities specially adapted for wireless communication networks [H04W 4/00](#); network structures or processes for video distribution between server and client or between remote clients [H04N 21/00](#); exchange systems providing special services or facilities to subscribers involving telephonic communications [H04M 3/42](#); distributed information systems [G06F 9/00](#), [G06F 17/00](#); lower layer network functionalities which support application layer provisions [H04L 12/00](#))}

**NOTES**

1. This group covers:

1. Networking arrangements or communication protocols to support networked applications which occur at the abstract network layers 5 to 7 of the OSI layer model. The higher layers constitute the interface between the network and the computer applications that use the network to communicate.
2. Network-specific aspects of client-server applications as well as of networking arrangements supporting networked/distributed applications, e.g. data transport, scheduling. This group also covers specific networked application layer protocols, e.g. FTP, WAP, HTTP.

2. This group does not cover:

1. Distributed applications which are network-agnostic, i.e. distributed information systems for which the network functions are transparent. These field are covered, e.g. by [G06F 9/00](#), [G06F 17/00](#). Data switching network provisions in general and the lower layer network functionalities which support application layer provisions are covered by [H04L 12/00](#) ]

**WARNING**

Groups H04L 67/00 -- H04L 67/42 do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: -- H04L 67/00 -- H04L 67/36 : H04L 29/08 -- H04L 67/38 -- H04L 67/42 : H04L 29/06 }

**H04L 69/00**

{Application independent communication protocol aspects or techniques in packet data networks (interconnection arrangements between CPUs, memories, or peripherals within a single computer [G06F 13/00](#); data switching networks [H04L 12/00](#); flow control [H04L 12/569](#); routing of packets [H04L 12/5689](#); network management [H04L 12/24](#); network monitoring or testing [H04L 12/26](#); network topologies, i.e. networks characterized by the path configuration, media access control [H04L 12/28](#); intermediate storage or scheduling [H04L 12/5694](#); packet switches and switching fabrics [H04L 12/5696](#); message switching systems, e.g. email, [H04L 12/58](#); broadcast or multicast [H04L 12/18](#); hybrid switching systems [H04L 12/64](#); gateways [H04L 12/66](#); networks specially adapted for wireless communication [H04W](#); transmission systems [H04B](#))}

**WARNING**

Groups [H04L 69/00](#) [H04L 69/40](#) do not correspond to former or current IPC groups. Concordance CPC -> IPC for these groups is as follows:

<a href="#">H04L 69/28</a>	:	<a href="#">H04L 29/06</a>	<a href="#">H04L 69/30</a>
<a href="#">H04L 69/329</a>	:	<a href="#">H04L 29/08</a>	
<a href="#">H04L 69/40</a>	:	<a href="#">H04L 29/14</a>	}

**Project: N/A (H04M)****U H04M 1/00**

Substation equipment, e.g. for use by subscribers; Analogous equipment at exchanges (prepayment telephone coin boxes [H04M 17/00](#); current supply arrangements [H04M 19/00](#); {telephone sets particularly adapted for data transmission [H04M 11/066](#); network interface devices [H04Q 1/028](#)})

## H04M 1/56

- Arrangements for indicating or recording the called number at the calling ~~subscriber`s~~ subscriber's set

## H04M 1/57

- Arrangements for indicating or recording the number of the calling subscriber at the called ~~subscriber`s~~ subscriber's set (at the operator set in a manual exchange [H04M 5/20](#))

## U H04M 1/66

- with means for preventing unauthorised or fraudulent calling (verifying user identity or authority in secret or secure digital communications [H04L 9/32](#))

## U H04M 1/677

- • Preventing the dialling or sending of predetermined telephone numbers or selected types of telephone numbers, e.g. long distance

## H04M 1/6775

- • • {by providing access to preprogrammed keys}

**U H04M 3/00**

**Automatic or semi-automatic exchanges {(constructional details of telephone exchanges [H04Q 1/02](#))}**

## U H04M 3/02

- Ringing or otherwise calling substations (selective calling [H04Q](#))

## H04M 3/06

- • calling signal supplied from ~~subscriber`s~~ subscriber's line circuit

## U H04M 3/22

- Supervisory, monitoring, {management, i.e. operation, administration, maintenance} or testing arrangements

## U H04M 3/26

- • with means for applying test signals {or for measuring}

## U H04M 3/28

- • • Automatic routine testing {; Fault testing; Installation testing; Test methods, test equipment or test arrangements therefor}

## H04M 3/30

- • • • for ~~subscriber`s~~ subscriber's lines {, for the local loop}

## H04M 3/301

- • • • {Circuit arrangements at the ~~subscriber`s~~ subscriber's side of the line}

## U H04M 3/42

- Systems providing special services or facilities to subscribers

## H04M 3/42221

- • {Conversation recording systems (at the subscriber`s set [H04M 1/656](#) at the ~~subscriber`s set~~ [H04M 1/656](#))}

## U H04M 3/42314

- • {in private branch exchanges}

- H04M 3/42323
  - • • {~~PBX's~~ **PBX's** with CTI arrangements}
- H04M 3/424
  - • Arrangements for automatic redialling (~~at the subscriber's set H04M 1/27~~ **at the subscriber's set H04M 1/27**)
- H04M 3/44
  - • Additional connecting arrangements for providing access to frequently-wanted subscribers, e.g. abbreviated dialling (~~at the subscriber's set H04M 1/27~~; **at the subscriber's set H04M 1/27**; automatic redialling [H04M 3/424](#))
- U H04M 15/00 Arrangements for metering, time-control or time indication {; Metering, charging or billing arrangements for voice wireline or wireless communications, e.g. VoIP}**
- U H04M 15/10
  - Metering calls from calling party; {, i.e. A-party charged for the communication}
- U H04M 15/12
  - • Discriminative metering {, charging or billing}
- U H04M 15/18
  - • • according to duration of the call {, or the communication}
- H04M 15/20
  - • • • ~~Operator's~~ **Operator's** time recording or indicating arrangements
- U H04M 2215/00 Metering arrangements; Time controlling arrangements; Time indicating arrangements**
- H04M 2215/68
  - Billing calls completely to the calling party, except POTS, e.g. charge on ~~caller's~~ **caller's** choice service

**Project: N/A (H04N)**

- U H04N 3/00 Scanning details of television systems**
- U H04N 3/10
  - by means not exclusively optical-mechanical ([H04N 3/36](#) takes precedence; electro-, magneto- or acousto-optical modulation or deflection of light beams [G02F 1/00](#))
- U H04N 3/14
  - • by means of electrically scanned solid-state devices (for picture generation [H04N 5/335](#))

WARNING  
Constructional details **97DP12C2B**
- H04N 3/15
  - • • {for picture signal generation}

WARNING  
This group is no longer used for classification of new documents as from December 1st, 2009. The backlog is continuously reclassified into group [H04N 5/335](#) and subgroups]
- U H04N 5/00 Details of television systems (scanning details or combination thereof with generation of supply voltages [H04N 3/00](#); specially adapted for colour television [H04N 9/00](#); {servers specially adapted for the distribution of content [H04N 21/20](#); client devices specially adapted for the reception of or interaction with content [H04N 21/40](#)})**
- NOTE  
Groups [H04N 5/341](#) to [H04N 5/378](#) are based on IPC2012.01
- U H04N 5/222
  - 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 5/262
  - • Studio circuits, e.g. for mixing, switching-over, change of character of image, other special effect; {Cameras specially adapted for the electronic generation of special effects}



- U H04N 5/272
  - • • Means for inserting a foreground image in a background image, i.e. inlay, outlay
- H04N 2005/2726
  - • • • {for simulating a ~~person's~~ ~~person's~~ appearance, e.g. hair style, glasses, clothes}
- H04N 5/66
  - Transforming electric information into light information (scanning details [H04N 3/00](#); {electro- or magneto optic devices [G02F 1/00](#); ~~CRT's~~ ~~H01J~~; ~~CRT's~~ ~~H01J~~})
- U H04N 5/76
  - Television signal recording (diagnosis, testing or measuring for television signal recorders [H04N 17/06](#); recording in connection with measuring [G01D](#); information storage {in which the television signal is not involved, driving, starting, stopping, head switching, editing, indexing} in general [G11](#), e.g. [G11B](#))
- U H04N 5/84
  - • using optical recording ([H04N 5/80](#), [H04N 5/89](#), [H04N 5/91](#) take precedence)
- H04N 5/87
  - • • Producing a motion picture film from a television signal (scanning of motion picture films for television signal generation [H04N 3/36](#); television signal generation by scanning a motion picture film [H04N 5/253](#) [H04N 9/11](#); {standard conversion therefor [H04N 7/0112](#)})

**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 13/0003
  - {Stereoscopic image signal coding, multiplexing, processing, recording or transmission (television signal bandwidth reduction [H04N 19/00](#); image coding for general purpose image data processing [G06T 9/00](#); transformation of the video signal for recording, including multiplexing of another television signal [H04N 5/9205](#); for colour signals, [H04N 9/8227](#); selective content distribution, e.g. interactive television, VOD [H04N 21/00](#); assembling of a multiplex stream, e.g. transport stream, by combining a video stream with other content or additional data, remultiplexing of multiplex streams, insertion of stuffing bits into the multiplex stream, assembling of a packetized elementary stream [H04N 21/236](#); disassembling of a multiplex stream, e.g. demultiplexing audio and video streams or extraction of additional data from a video stream, remultiplexing of multiplex streams, extraction or processing of service information at client side, disassembling of packetized elementary stream [H04N 21/434](#))}
- U H04N 13/0007
  - • {Processing stereoscopic image signals ([H04N 19/597](#), [H04N 13/004](#) take precedence; image processing as such [G06T](#))}
- H04N 13/0022
  - • • {Aspects relating to depth or disparity adjustment}

**U H04N 21/00**

**Selective content distribution, e.g. interactive television, VOD [Video On Demand] (broadcast communication [H04H](#); arrangements, apparatus, circuits or systems for communication control or processing being characterised by a protocol [H04L 29/06](#); {broadcast or conference over packet-switching networks [H04L 12/18](#), } real-time bi-directional transmission of motion video data [H04N 7/14](#))**

**NOTES**

1. This group covers :

- interactive video distribution processes, systems, or elements thereof, which are characterised by point-to-multipoint system configurations, and which are mainly used for motion video data unidirectional distribution or

delivery resulting from interactions between systems operators, e.g. access or service providers, or users e.g. subscribers, and system elements.

- such systems include dedicated communication systems, such as television distribution systems, which primarily distribute or deliver motion video data in the manner indicated, which may, in addition, provide a framework for further, diverse data communications or services in either unidirectional or bi-directional form. However, video will occupy most of the downlink bandwidth in the distribution process.
- typically, system operators interface with transmitter-side elements or users' interface with receiver-side elements in order to facilitate, through interaction with such elements, the dynamic control of data processing or data flow at various points in the system. This interaction is typically occasional or intermittent in nature.
- processes, systems or elements thereof specially adapted to the generation, distribution and processing of data, which is either associated with video content, e.g. metadata, ratings, or related to the user or his environment and which has been actively or passively gathered. This data is either used to facilitate interaction or to alter or target the content.

2. In this main group, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place

3. In this main group, the following terms and expressions are used with the meaning indicated:

additional data - designates still pictures, textual, graphical or executable data such as software. It is used to convey supplemental information and can be generated prior to or during the distribution process itself, e.g. metadata, keys.

content designates video or audio streams, which may be combined with additional data. Video data will always be present and occupy most of the downlink bandwidth in the distribution process

server - designates an apparatus designed for adapting the content received from the content provider to the distribution network. It also manages the distribution to client devices or intermediate components over a network. Further servers may also be present for gathering or generating additional data, e.g. rights management server

additional data server - designates a server, which sole purpose is the distribution or management of additional data. It is not in charge of the distribution of video or audio data

client - designates an apparatus such as a TV receiver, a set-top-box, a PC-TV, a mobile appliance (e.g. mobile phone or receiver in a vehicle), for receiving video, audio and possibly additional data from one or several servers or intermediate components via a network for further processing, storing or displaying. It can also transmit this data on a home-based local network to further devices, e.g. a home server transmitting video to PCs and set-top-boxes within a home.

local network - pertains to a restricted area, e.g. a home or a vehicle, and designates the link between a client and its peripheral devices

network - is to be distinguished from "local network": "network" designates the link between the server and the clients, or between the server and the intermediate components, or between the intermediate components and the clients, or between remotely located clients

distribution - encompasses broadcasting, multicasting and unicasting techniques for transmitting content from one or more sources to one or more receiving stations. The distribution follows a request by a receiving station to the source, e.g. VOD or from a customization of the content by the source, e.g. targeting advertisements to a demographic group in a unidirectional or bidirectional system. Additionally, distribution encompasses techniques where the client acts as a source and another client acts as a receiving station, e.g. a peer-to-peer system for sharing video among client devices

end-user - designates a physical person, e.g. a TV viewer, who consumes the content using the client device. He is the final recipient of the content distributed by the server  
interaction - covers actions occurring between or among two or more objects that have an effect upon one another, wherein objects comprise users, system operators, system elements, or content. The user may interact with content locally at the client device, e.g. for requesting additional data stored within the client device. The user may interact with content remotely through a server e.g. for VOD playback control or for uploading video to a server. The client device may interact with the content e.g. selecting content based upon the user profile. The client device may interact with a server using a return channel, e.g. for authenticating client or uploading client hardware capabilities. The server may interact with a client device, e.g. to force a client to tune to an advertisement channel  
upstream - designates the direction of data flow towards the source, e.g. a server receiving a request via a mobile phone network  
downstream - designates the direction of data flow towards a client, e.g. a client receiving data originating from a server  
elementary stream (ES) as defined by the MPEG system layer designates the output of an audio or video encoder

- U H04N 21/60
  - {using} Network structure or processes {specifically adapted} for video distribution between server and client or between remote clients (data switching networks [H04L 12/00](#); wireless communication networks [H04W](#)); Control signaling {specific to video distribution} between clients, server and network components {, e.g. to video encoder or decoder}; Transmission of management data between server and client {e.g. sending from server to client commands for recording incoming content stream}; Communication details between server and client (Protocols for communication control and processing in data networks [H04L 29/06](#); Protocols for client-server architecture [H04L 67/42](#))
- U H04N 21/63
  - • Control signaling {related to video distribution} between client, server and network components; Network processes for video distribution between server and clients {or between remote clients}, e.g. transmitting basic layer and enhancement layers over different transmission paths, setting up a peer-to-peer communication via Internet between remote STB's; Communication protocols; Addressing (signalling, control or architecture for real-time multimedia communications [H04L 29/06183](#); arrangements for peer-to-peer communications [H04L 29/08306](#))
- U H04N 21/647
  - • • {Control signaling between network components and server or clients; Network processes for video distribution between server and clients, e.g. controlling the quality of the video stream, by dropping packets, protecting content from unauthorized alteration within the network, monitoring of network load, bridging between two different networks, e.g. between IP and wireless (signalling, control or architecture for real-time multimedia communications [H04L 29/06183](#))}
- U H04N 21/64746
  - • • • {Control signals issued by the network directed to the server or the client}
- U H04N 21/64761
  - • • • • {directed to the server}
- H04N 21/64776
  - • • • • {for requesting retransmission, e.g. of data packets lost or corrupted during transmission from server (ARQ protocols [H04L 1/18](#); Transmission Control Protocol / Internet Protocol [TCP/IP] [H04L 29/06095](#))}

## Project: N/A (H04Q)

- U H04Q 3/00
  - Selecting arrangements ([H04Q 5/00](#) to [H04Q 11/00](#) take precedence)
- H04Q 3/76
  - Translation from the called ~~subscriber's~~*subscriber's* number to the outgoing or incoming control information

**U H04Q 2213/00 Indexing scheme relating to selecting arrangements in general and for multiplex systems**

- H04Q 2213/13203 · Exchange termination [ET]
- H04Q 2213/246 · Instant ~~speaker's~~ **speaker's** algorithm [ISA]

**Project: MP0123 (H04R)**

**M H04R 25/00** Deaf-aid sets {providing an auditory perception; Electric tinnitus maskers providing an auditory perception} (constructions of transducers per se [H04R 9/00](#) to [H04R 23/00](#); {non-electric hearing aids [A61F 11/008](#); replacing direct auditory perception by another kind of perception [A61F 11/04](#); electrical stimulation of auditory nerves to promote the auditory function [A61N 1/36032](#)} ; structural combination with spectacle frames [G02C 11/06](#); processing of speech signals [G10L 21/00](#))

**NOTE**

Classification should be directed to groups [H04R 25/02](#), [H04R 25/04](#) or [H04R 25/50](#) and its subgroups, if and only if the technical subject in consideration cannot be classified elsewhere under the main group [H04R 25/00](#)

**WARNING**

Groups H04R 25/30 to H04R 25/75 do not correspond to former or current IPC groups.

**Project: N/A (H04R)**

- H04R 25/75 · {Electric tinnitus maskers providing an auditory perception (evaluating tinnitus [A61B 5/128](#); devices or methods to cause a change in the state of consciousness [A61M 21/00](#); masking sound in general [G10K 11/175](#)-)}~~{WARNINGNot complete pending a reorganization, see also H04R 25/00}~~

**WARNING**

Not complete pending a reorganization, see also [H04R 25/00](#)

**Project: MP0123 (H04S)**

**M H04S 7/00** Indicating arrangements; Control arrangements, e.g. balance control

**WARNING**

Groups H04S 7/30 to H04S 7/40 do not correspond to former or current IPC groups.

**Project: MP0123 (H04W)**

**M H04W 48/00** Access restriction; Network selection; Access point selection

**WARNING**


Group H04W 48/17 does not correspond to former or future IPC groups.

**Project: N/A (H04W)**

**U H04W 80/00** Wireless network protocols or protocol adaptations to wireless operation, e.g. WAP [Wireless Application Protocol]

- U H04W 80/04
- Network layer protocols, e.g. mobile IP [Internet Protocol]
- WARNING  
This group is used only for indicating additional information when it is of interest for search
- H04W 80/045
- {involving different protocol versions, e.g. MIPv4 and MIPv6}
- WARNING  
This group is used only for indicating additional information when it is of interest for search
- U H04W 80/08
- Upper layer protocols {(network arrangements or communication protocols for networked applications [H04L 67/00](#))}
- H04W 80/085
- {involving different upper layer protocol versions, e.g. LCS - SUPL or WSN-SOA-WSDP}
- U H04W 92/00** **Interfaces specially adapted for wireless communication networks**
- U H04W 92/04
- Interfaces between hierarchically different network devices
- H04W 92/14
- between access point controllers and backbone network device ~~N0801~~

**Project: N/A (Y10S)**

- U Y10S 424/00** **Drug, bio-affecting and body treating compositions**
- Y10S 424/809
- involving immunoglobulin or antibody fragment, e.g. fab-, fv, fc, heavy chain or light chain