Clarivate

CPI Manual Codes

Derwent World Patents Index | Edition 33

Clarivate

Derwent World Patents Index (DWPI)

CPI Manual Codes

Edition 33

Edition 32 published January 2025
Edition 31 published January 2024
Edition 30 published January 2023
Edition 29 published January 2022
Edition 28 published January 2021
Edition 12 published January 2005

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CPI Manual Codes

Introduction

Derwent Manual Codes have been developed over a period of more than 50 years, having been first introduced in 1963 when they were applied to patent references of the Farmdoc Service. Subsequently, this service has been renamed Section B and incorporated into the Chemical Patents Index (CPI).

As other areas of technology were introduced, new Manual Codes were developed. For example, codes for agricultural patents - Section C (1965), plastics and polymer patents - Section A (1966) and for the remaining sections of CPI in 1970.

Codes are applied to the inventive/significant features of the invention using the Documentation Abstract as the source document. The codes are assigned by teams of Clarivate analysts who have been specially trained in the application of these codes. The analysts have specialist knowledge in each of the areas of technology with which they are concerned.

About this user guide

This manual is divided into 3 sections. The first section is a list of manual codes in code order, with definitions, by section beginning with Section A and running through each of the Derwent CPI sections to M.

A	Polymers, Plastics	Plasdoc
B	Pharmaceuticals	Farmdoc
C	Agricultural Chemicals	Agdoc
D	Food, Fermentation, Disinfectants, Detergents	
E	General Chemicals	Chemdoc
F	Textiles, Paper, Cellulose	
G	Printing, Coating, Photographic	
H	Petroleum	
J	Chemical Engineering	
K	Nucleonics, Explosives, Protection	
L	Glass, Ceramics, Electro(In)organics	
M	Metallurgy	

The second section comprises 3 appendices which provide quick references for Nano-technology, Green technology and Genetic Engineering respectively.

Section 3 is a list of terms in alphabetical order together with the appropriate code(s).

To select codes, the alphabetical list should be consulted first. Once a code or group of codes has been identified, it is necessary to check the context of the code(s) and to take note of any special notes or conventions by looking in the code order list.

Manual codes are arranged in hierarchies with a broad or general code at the top of the hierarchy followed by sub-divisions of the code into more and more specific categories which may have been introduced over a period of time.

When selecting codes, it is necessary to take into account any broader codes which may have been in use in previous years. If the codes are to be used in online searches then truncation can be used to take the broader codes into account. The different levels in each hierarchy are indicated in this manual by an increasing number of dots e.g. ., ..

Some code definitions have an indication of a year, e.g. 1994, in the entry. This indicates the time at which the code was introduced. Those without a year indicated are valid from the beginning of the coverage for that section.

Scope notes are given for some codes and should be taken into account when selecting codes. Those notes which apply to a group of codes are given at the head of the group.

Format of the Codes

The format of the code is based firstly on the Section letter, e.g. A for Section A, B for Section B, etc., and then a series of alphanumerics as exemplified below:

A01

A01-A

A01-A00A

A01-A01

A01-A01A

A01-A01A1

The format for searching is exactly as the codes appear in this manual. Codes in Documentation Abstracts products appear in a slightly different format which is that without "leading zeros". For example, the code B06-D01 would appear as B6-D1.

Searching codes using the online hosts

Manual Codes can be searched in Derwent World Patents Index on Derwent Innovation, ProQuest Dialog and STN.

Various other search parameters can be combined with manual codes, e.g. International Patent Classifications (IPCs, taken from the front page of the patent specification), Cooperative Patent Classifications (CPCs, taken from the front page of the patent specification), Derwent Class and, of course, free text.

There are several advantages in using manual codes. The fact that they are applied by specialist teams of analysts at Clarivate means that the codes are applied in a consistent manner. Also, the need to search all possible synonyms and spellings of the topic of interest is avoided by the use of a coding system.

Online search example

Searching for dental equipment using the Derwent Class P32 would not cover only dentistry but also bandages, veterinary and prostheses such that many references retrieved searching on the Class will not be related to dentistry. However, the appropriate manual code D08-A04 (valid since 1986) will search on dental equipment only.

=> s p32/dc
L1 324760 P32/DC

=> d 1-3 ti

L1 ANSWER 1 OF 324760 WPIX COPYRIGHT 2017 CLARIVATE on STN
TI Incontinence disposable diaper comprises a main part that is provided with a suction body in a longitudinal direction and a transverse direction, and a front region is attached with front the lateral longitudinal edge

L1 ANSWER 2 OF 324760 WPIX COPYRIGHT 2017 CLARIVATE on STN
TI Dental medical instrument such as ultrasound calibrator, comprises thermochromic pigments which are arranged for visual display of temperatures on surface of dental medical instrument or dental medical device

L1 ANSWER 3 OF 324760 WPIX COPYRIGHT 2017 CLARIVATE on STN
TI Absorbent articles such as sanitary napkin, has bend line that is provided in low-fabric weight portion so that low-fabric weight portion protrudes to wearer side by contraction of elastic medium in unfolded state

Looking at the three titles above, only the second is relevant to dentistry equipment owing to the breadth of technologies covered by this class. It is also worth noting the extremely substantial number of records retrieved in the answer set. However, if we were to refine our search using the previously referenced manual code in conjunction with the P32 class:

=> s l1 and D08-A04/mc
D08-A04 DENTAL INSTRUMENTS, SALIVA PUMPS, SYRINGES
945 D08-A04/MC
L2 624 L1 AND D08-A04/MC

=> d 1-3 ti

L2 ANSWER 1 OF 624 WPIX COPYRIGHT 2017 CLARIVATE on STN
TI Dental fitting of dental assembly attachable to dental component such as dental implant, has attachment portion having projection extending in directions perpendicular to direction from attachment portion towards coronal end of main housing

L2 ANSWER 2 OF 624 WPIX COPYRIGHT 2017 CLARIVATE on STN
TI Oral care device for placement in oral cavity comprises flexible base substrate, flexible power source disposed on surface of base substrate, and electrode layer disposed on surface of flexible base substrate or flexible power source

L2 ANSWER 3 OF 624 WPIX COPYRIGHT 2017 CLARIVATE on STN
TI Probe for hand-held-type intraoral scanner for acquiring three-dimensional shape of tooth of patient, has lighting part arranged in housing, and main body for changing position of reflection part by pressing part of housing from outer side

Looking at the titles above, which are all relevant and falling within a more manageable results set, highlights the benefits of using CPI Manual Codes.

Section N - Catalyst Codes

In the various Manual Code products (online records, documentation abstracts), there will appear from time to time some N manual codes. These codes can be derived from any CPI Section (A through to M).

N manual codes have been applied to sections E, H and J from Derwent Week 197701.

From 197901, coverage was extended to Sections B, C, D, E and L.

N codes are not applied to Section A, F and G.

Section N is not a true Derwent Section but is in fact one of the CPI profiles (No. 21).

Chemical Codes (including Derwent Chemistry Resource and Derwent Markush Resource)

Chemical Fragmentation Codes, graphics indexing and Derwent Registry Numbers are applied to concepts in patents covered by Section B, C and E of CPI. They allow precise searches not only of specific compounds, but also for "Markush" structures which can represent literally millions of compounds.

These indexing methods provide the most comprehensive retrieval systems offered by Clarivate for searching patents, and they involve complete coverage of claims and examples. The use of Manual Codes in conjunction with these is useful in the following cases:

- Because of the high frequency of application of some Fragmentation Codes, the number of results is sometimes very high. The Manual Codes can be used in these cases to refine the search and separate out those of higher relevance (using AND).
- Improved precision is obtainable using a Manual Code where its definition of a concept is more precise than that of the Fragmentation Code.

Polymers and Plastics Codes/Polymer Indexing

The Polymer/Plastics Codes and Polymer Indexing system allow precise searches to be carried out, with high recall, of subject matter belonging to Section A of CPI. The codes represent repeating units of polymers, functional groups, elements, properties, forming processes, modification processes or products and uses of polymers.

The Polymer/Plastics Code has been considerably refined over the years and now Polymer Indexing (since the end of 1993) allows for more specific searching by using linking groups: each separate polymer concept and its associated terms being contained within a linking group.

As with Chemical Codes, the Polymer/Plastics Codes and Polymer Indexing may be used in conjunction with Manual Codes to give a higher relevance and precision to your answer sets.

Products featuring Manual Codes

Documentation Abstracts

Each Documentation Abstract carries all the Manual Codes assigned in a box at the top right-hand half of the abstract. The codes for each section are grouped together in parentheses with the initial letter removed and placed at the front outside the parentheses.

For example:

B(4-C02E3, 12-M01D)

represents

B04-C02E3 and B12-M01D

(As explained under the heading Format, codes in the printed products are abbreviated by omitting zeros.)
In the case of abstracts assigned to both Sections B and C, the codes are combined as follows:

BC(4-C3, 12-M10B, 12-M11D)

represents

B04-C03, B12-M10B, B12-M11D, and

C04-C03, C12-M10B, C12-M11D

Images of Documentation Abstracts

This product provides images of the Documentation Abstracts, supplied via Derwent Innovation, the DAJ Web platform, and via FTP for use via Derpict software.

Manual codes may also be searched, depending on subscription levels, in ***Derwent Innovation***, ***Derwent Innovations Index*** and ***Cortellis***.

A:
POLYMERS; PLASTICS

A01 Monomers, Condensants
A02 Polymerisation Controllers
A03 Natural Polymers
A04 Addition Polymers
A05 Condensation Polymers
A06 Inorganic Polymers
A07 Polymer Blends, Aqueous Dispersions
A08 Additives
A09 Properties, Analysis, Testing, Control
A10 Polymerisation, Polymer Modification
A11 Processing Polymers including Equipment
A12 Polymer Applications

A: POLYMERS; PLASTICS

Code commenced 1966 (Accession Number 60,001P)

Main Headings

A01: Monomers, condensants

A02: Polymerisation controllers

A03: Natural polymers

A04: Addition polymers

A05: Condensation polymers

A06: Inorganic polymers

A07: Polymer blends; aqueous dispersions

A08: Additives

A09: Properties, analysis, testing, control

A10: Polymerisation; polymer modification

A11: Processing polymers including equipment

A12: Polymer applications

Scope

All polymers and their related concepts are retrievable using one or more of the above sections. The code is hierarchical in structure so that both generic and specific searching can be carried out.

The polymer-related subject matter only is retrievable using the manual codes. For e.g. a reference to extrusion of aluminium tubes using a polymeric lubricant, the codes for extrusion and the tubes are not assigned. The use of polymer (as lubricants and in metallurgy) is searchable.

Indexing approach

The coding is based on the Derwent documentation abstract (the specification only being consulted when the information to hand is too vague or is ambiguous). One or more codes are applied to cover only the main inventive features of the invention. There is no set upper limit to the number of codes assigned.

Coding rules

The coding is carried out generally according to the following rules:-

1. For a novel polymer composition, which can be used in a wide range of applications, only the composition is coded.
2. For a novel polymerisation catalyst, the corresponding polymerisation process is not coded. However the products, i.e. the polymers produced, are coded.
3. Where a particular process, additive or catalyst is disclosed for specific polymer(s), then both the feature and the polymer(s) are coded e.g. in a reference heat stabiliser for PVC, both concepts are coded.
4. Where a novel additive can be used for a range of alternative polymers e.g. an azo dye for cellulose acetate, polyamide and polyester etc.; then the novel additive (e g. dye) only is coded.
5. For a polymeric additive or catalyst/controller, the polymer blend code is not applied. The additive should be searched in the polymer section and in the appropriate additive sections. However, the catalyst/controller can be searched in the appropriate catalyst section, polymer section and as A12-W11K.
6. Properties of polymers are only coded if they are of exceptional importance. As examples, properties are coded for high impact polymers or polymers of improved dyeability.
7. References to modified polymers are only coded in A10-E: section. The polymer from A03: to A06: sections is only coded if the process of modification is described.
8. Where a large number of specific concepts belonging to a section are described, then the generic code only of that section is applied e.g. if polyethylene, polypropylene, polybutene-1 and EPDM are codable in an abstract then only A04-G01+ is applied. Therefore, for complete retrieval of a specific concept, both the specific and the generic code should be searched.
9. Prepolymers or intermediates for polymers are conventionally coded as polymers e.g. ethylene glycol terephthalate (A05-E04+), bisphenol A diglycidyl ether (A05-A02), polyurethane prepolymers (A05-G+), polyamic acids (A05-J01+).

Online retrieval

Since the codes are assigned only to the main inventive features, a search will result in hits of high relevance. For complete recall, fragmentation code searching is recommended.

The manual codes can then be used to (i) limit the hits to those of high relevance or (ii) to divide the hits from a fragmentation code search into those of high and those of low relevance, when the number of hits obtained is unacceptably large.

Because a generic code only of a section is applied for a large number of specific concept(s) belonging to that section, the ORing of the generic and the specific code(s) is recommended for complete retrieval.

Time ranging

The code has been improved by addition of manual codes during pre-CPI year range (from the Accession Number range 80,000P), and at the beginning of the Accession years 1970, 1977, 1986 and 1994.

Where the coding for a concept had undergone alterations, then for precise retrieval, use may be made of the searchable field Accession Year (or Entry Year) (see Derwent World Patents Index user guides) to restrict the use of the appropriate code to the time period during which it is valid.

A01 MONOMERS, CONDENSANTS

Coverage

These are also classified in Section E.

All patents relating to the production and purification of the following: acrolein, acrylic acid, acrylonitrile, adipic acid, bisphenol A, butadiene, caprolactam, chloroprene, diethyl or dimethyl terephthalate, ethyl acrylate, ethylene, ethyl methacrylate, formaldehyde, hexamethylene diamine, isobutene, isoprene, maleic anhydride, melamine, methacrylic acid, methyl (meth)acrylate, methyl styrene, 2,6-naphthalene dicarboxylic acid, phenol, phthalic anhydride, propylene, sebacic acid, styrene, terephthalic acid, tetrafluoroethylene, urea, vinyl acetate, vinyl chloride and vinylidene chloride.

All patents relating to the production and purification of new monomers shown clearly to be usefully polymerisable. Purification, stabilisation or new route of production only of all other known usefully polymerisable monomers. Starting materials for monomers are not coded. Also the catalysts and the processes for the production of monomers are not coded.

For polymerisation of a monomer, search the product i.e. polymer only along with polymerisation process (A10: section) if desired.

A01-A	**COMPOUNDS CONTAINING THE ELEMENTS OR GROUPS BELOW** Including all compounds not covered by A01-B: to A01-E:, but excluding metal salts. Including their production, handling, storage and purification.
A01-A00A	**General heteroatom containing** Indexed where the polymer former would require three or more codes from the A01-A+ hierarchy. **1994**
A01-A01	**Boron containing compounds** e.g. borazoles, carboranes
A01-A02	**Phosphorus containing compounds** e.g. phosphonitrilic halides
A01-A03	**Silicon containing compounds** e.g. silanes, cyclic siloxanes
A01-A04	**Metal containing compounds** Including those having a metal-carbon bond e.g. tributyl tin methacrylate (with A01-D08); vinyl ferrocene (with A01-D)

A01-A05 **Nitroso group containing compounds**
e.g. trifluoro-nitrosomethane

A01-A **Other monomers, condensants not containing gen. heteroatoms, B, Si, metal, or nitroso groups**
e.g. sulphur dioxide

A01-B **COMPOUNDS CONTAINING POLYMERISABLE C-C BONDS**
Excluding A01-C:, A01-D:. Including their production, handling, storage and purification.

A01-B00B **General C-C bond**
Indexed where the polymer former would require three or more codes from the A01-B+ hierarchy.
1994

A01-B01 **Compounds containing both C-C double and C-C triple bonds**
e.g. vinyl acetylene, dimethyl vinyl ethynyl carbinol.

A01-B02 **Compounds containing C-C triple bond(s) only**
e.g. acetylene, propargyl alcohol.

A01-B03 **Compounds containing more than two C-C double bonds**
e.g. trimethylolpropane triacrylate, diallyl maleate, pentaerythritol tetraacrylate.

A01-B04 **Petroleum chemicals, general**
e.g. products resulting from refinery cracking processes.

A01-B **Other monomers, condensants containing polymerisable C-C bonds**

A01-C **DIOLEFINIC MONOMERS**
Including their production, handling, storage and purification.

A01-C00C **General diolefinic**
Indexed where the polymer former would require three or more codes from the A01-C+ hierarchy.
1994

A01-C01 **Aromatic or (cyclo)aliphatic esters**
e.g. diallyl phthalates

A01-C02 **Other aromatic compounds substituted by heteroatoms/groups**
Excluding A01-C01; e.g. bisphenol A diallylether.

A01-C03 **Other aromatic compounds optionally substituted by hydrocarbyl groups only**
e.g. divinylbenzene, divinyl toluene.

A01-C04 **(Cyclo)aliphatic compounds substituted by heteroatoms/groups**
Excluding A01-C01; e.g. chloroprene.

A01-C05 **(Cyclo)aliphatic hydrocarbons optionally substituted by hydrocarbyl groups only**
Excluding A01-B04; e.g. butadiene, isoprene, allene, dicyclopentadiene, piperylene.

A01-C06 **Bismaleimides**
1994

A01-C **Other diolefinic monomers**

A01-D **MONOOLEFINIC MONOMERS**
Including their production, handling, storage and purification

A01-D00D **General monoolefinic**
Indexed where the polymer former would require three or more codes from the A01-D+ hierarchy.
1994

A01-D01 **Heterocyclics containing nuclear N**
e.g. vinyl pyridine, vinyl carbazoles, maleimide.

A01-D02 **Aromatics substituted by hetero atoms/groups**
e.g. cinnamic acid, coumarone, vinyl benzene sulphonic acid, chloromethyl styrene, vinyl benzoate.

A01-D03 **Other aromatics optionally substituted by hydrocarbyl groups only**
e.g. styrene, alpha-methyl styrene, vinyl toluene, indene.

A01-D04 **(Cyclo)aliphatic nitriles**
e.g. acrylonitrile; cyanoacrylic acid (with A01-D08); cyanoacrylates (with A01-D10); vinylidene cyanide.

A01-D05 **(Cyclo)aliphatic aldehydes or ketones**
e.g. acrolein; diacetone acrylamide (with A01-D06).

A01-D06 **(Cyclo)aliphatic amides**
e.g. acrylamide; diacetone acrylamide (with A01-D05).

A01-D07 **N-contg. generics and others**
Excluding A01-D01, A01-D04, A01-D06; e.g. aminoalkyl acrylates (with A01-D10).

A01-D08 **(Cyclo)aliphatic carboxylic acids, anhydrides or salts**
e.g. acrylic acid; maleic anhydride (with A01-E12); cyanoacrylic acid (with A01-D04); including acrylic anhydrides..

A01-D09 **(Cyclo)aliphatic alcohols**
e.g. allyl alcohol.

A01-D10 **(Cyclo)aliphatic carboxylic esters, general**
e.g. methyl methacrylate; vinyl acetate; dibutyl maleate (with A01-E12); aminoalkyl acrylates (with A01-D07); cyanoacrylates (with A01-D04).

A01-D10A . **Vinyl esters**
e.g. vinyl acetate.
2002

A01-D10B . **(Meth)acrylic esters**
e.g. methyl (meth)acrylate.
2002

A01-D11 **(Cyclo)aliphatic ethers**
Excluding vinyl thioethers for which see A01-D; e.g. methyl vinyl ether.

A01-D12 **(Cyclo)aliphatic halides**
Including acid halides; e.g. vinyl(idene) chloride; tetrafluoroethylene; fluoroacrylates (with A01-D10).

A01-D13 **(Cyclo)aliphatic hydrocarbons**
Excluding A01-B04; e.g. olefins such as ethylene, propylene, diisobutylene; norbornene.

A01-D **Other monoolefinic monomers**
e.g. vinyl silanes (with A01-A03); vinyl phosphonic acid (with A01-A02); allyl sulphonic acid; vinyl ferrocene (with A01-A04); vinyl thioethers.

A01-E **CONDENSANTS**
Including their production, handling, storage and purification

A01-E00E **General condensants**
Indexed where the polymer former would require three or more codes from the A01-E+ hierarchy.
1994

A01-E01 **Triazines**
e.g. melamine, guanamine.

A01-E02 **Iso(thio)cyanates**
e.g. toluene diisocyanate, isophorone diisocyanate. For blocking agents see A02-C.

A01-E03 **Amides**
Including urea. For lactams see A01-E04.

A01-E04 **Lactams; amino acids**
e.g. caprolactam, aminocaproic acid, glutamic acid.

A01-E05 **Amines**
Excluding A01-E01; e.g. aniline, hexamethylene diamine, hexamethylene tetramine, piperidine, ethyleneimine. Used for nitriles together with A01-E11 or A01-E12 as appropriate e.g. for adiponitrile search A01-E05 and A01-E12.

A01-E06 **Other N-containing**
Excluding A01-E01 to A01-E05; e.g. oxazoli(di)nes, oxazines, benzimidazoles.

A01-E07 **Mono-epoxy compounds**
e.g. epihalohydrin; ethylene oxide; monoglycidyl ether/ester; glycidol (with A01-E14); and thiiranes (episulphides).

A01-E08 **Cyclic (thio)ethers**
Excluding A01-E07; e.g. tetrahydrofuran (THF), oxetanes.

A01-E09 **Formaldehyde**
Including trioxane, tetraoxane.

A01-E10 **Aldehydes, ketones**
Excluding A01-E09, e.g. acetaldehyde, furfural, acetone, ketenes.

A01-E11 **Aromatic carboxylic acids, acid halides, anhydrides or esters**
e.g. phthalic (iso-, ortho- and tere-), trimellitic, pyromellitic.

A01-E12 **(Cyclo)aliphatic carboxylic acids, acid halides, anhydrides or esters**
e.g. adipoyl chloride; sebacic acid; maleic anhydride (with A01-D08); bishaloformates.

A01-E13 **Phenols**
Including monohydric and polyhydric e.g. phenol, cresols, resorcinol, bisphenol A.

A01-E14 **Alcohols**
Including dihydric and polyhydric e.g. ethylene glycol, pentaerythritol, cyclohexane dimethanol.

A01-E **Other condensants**
e.g. heterocyclic acids; for lactones see A01-E14 and A01-E11 or A01-E12 as appropriate. Similarly for other condensants containing functionally dissimilar groups e.g. diethanolamine see A01-E05 and A01-E14.

A01-F	**INTERMEDIATES WHERE THE FINAL MONOMER IS UNKNOWN** **1994**
A01-F	**Intermediates where the final monomer is unknown** **1994**

A02 POLYMERISATION CONTROLLERS

The use of this section is restricted to polymerisation only. Catalysts used for crosslinking, although often referred to as polymerisation catalysts, are coded as accelerators as appropriate (see A08-C: or A08-D: section). For catalyst recovery/removal from polymer, and for catalyst destruction see A10-G+. Catalysts for processes other than polymerisation, such as production of monomer, condensant or additive, for crosslinking or for polymer modification, are not coded.

A02-A	**CATALYSTS AND ACTIVATORS** Excluding catalysts and activators for any purpose other than polymerisation, e.g. production of monomers, condensants or additives, for crosslinking or for polymer modification.
A02-A00A	**General catalyst** Indexed where three or more codes would be required from the A02-A+ hierarchy. Also indexed for unspecified catalysts. **1994**
A02-A01	**Peroxides, persalts** e.g. potassium persulphate, hydrogen peroxide etc.; including hydroperoxides, oxygen; excluding Redox (see A02-A03).
A02-A02	**Azo compounds** e.g. azobisisobutyronitrile; including hyponitrites.
A02-A03	**Free radical, general and others** Excluding A02-A01, A02-A02. Including components of Redox catalysts e.g. ammonium persulphate and ferrous sulphate; ceric ammonium nitrate.
A02-A04	**Friedel Crafts** Including Lewis acids, e.g. BF3 (etherate), AlCl3, SnCl4, TiCl4 (used without an activator), FeCl3, H2SO4, HF, H3PO4.
A02-A05	**Alfin** e.g. mixture of allyl sodium, sodium isopropoxide and sodium chloride.

A02-A06 **Transition metal (or compound)**
Excluding A02-A06A to A02-A06D. All transition metal (or compound) containing compositions are searchable in A02-A06 or subdivisions thereof; if the composition further contains a novel non- transition metal (compound) component, see also A02-A07A or A02-A10. Transition metal compounds in free radical or Friedel-Crafts systems are searchable in this section (search A02-A01 to A02-A05 appropriately). Transition metals are: Ag, Au, Co, Cr, Cu, Fe, Hf, Ir, Mn, Mo, Nb, Ni, Os, Pd, Pt, Re, Rh, Ru, Sc, Ta, Tc, Ti, V, W, Y, Zr and the actinides and lanthanides.

A02-A06A **. Oxides**
e.g. CrO3. Prior to 1970 see A02-A06.
1970

A02-A06B **. (Oxy)halides**
With no other substitution(s). e.g. TiCl3, VOCl3. Prior to 1970 see A02-A06.
1970

A02-A06C **. Also containing organo-aluminium compounds**
Excluding A02-A06A, A02-A06B; e.g. Ti(OiBu)4 with Et3Al. Prior to 1977 see A02-A06, A02-A06A and A02-A06B.
1977

A02-A06D **. Containing Cr, Hf, Mn, Mo, Nb, Ta, Ti, V, W or Zr only**
Excluding A02-A06A to A02-A06C; e.g. Ti(OiBu)4. Prior to 1977 see A02-A06, A02-A06A and A02-A06B.
1977

A02-A06E **. Metallocenes, general**
Excludes A02-A06D. See also A02-A06C.
1994
Previous code(s): A02-A06+

A02-A06E1 **.. Containing Ti, Zr or Hf**
Excluding A02-A06D. See also A02-A06C.
1994
Previous code(s): A02-A06+

A02-A06E2 **.. Containing other transition metal**
Excludes A02-A06D. See also A02-A06C.
1994
Previous code(s): A02-A06+

A02-A07 **Non-transition metal (compounds)**
Excluding A02-A01 to A02-A05; including Boron, Si.

A02-A07A **. With transition metal (compound)**
Only when novelty. Prior to 1970 see A02-A07.
1970

A02-A07B **. Alkali(ne earth) metal containing organic compounds**
Including salts and complexes e.g. sodium lactamate, butyl lithium; excluding A02-A07A. Prior to 1977 see A02-A07.
1977

A02-A07C **. Organoaluminium compounds**
Excluding when in presence of a transition metal (compound). Prior to 1977 see A02-A07.
1977

A02-A08 **Stereospecific**
Excluding A02-A06+.

A02-A09 **Photocatalyst**

A02-A10 **Non-metallic activators for transition metal type catalysts**
Only when novelty; e.g. amines, esters, P compounds. Prior to 1970 see A02-A06.
1970

A02-A11 **Phosphorus containing**
Excluding A02-A01 to A02-A10. Prior to 1977 see A02-A.
1977

A02-A12 **Biocatalyst eg enzymes**
2002

A02-A **Other polymerisation controllers - catalysts and activators**
e.g. t-amines.

A02-B **CHAIN TRANSFER AGENTS, REGULATORS, MODIFIERS, TELOGENS, CHAIN COUPLERS**

A02-B **Chain transfer agents, regulators, modifiers, telogens, chain couplers**
e.g. H2 in olefin polymerisation, SiCl4, oxazolines.

A02-C **POLYMERISATION INHIBITORS AND CHAIN STOPPERS, BLOCKING AGENTS FOR MONOMERS OR CONDENSANTS**

A02-C **Polymerisation inhibitors and chain stoppers, blocking agents for monomers or condensants**
e.g. hydroquinone, phenol; including catalyst deactivators.

A02-D	**OTHER CONTROL MATERIALS**
A02-D01	**Buffers**
A02-D	**Catalyst support and others** e.g. SiO2, Al2O3; as catalyst supports, seeding agents.

A03 NATURAL POLYMERS

Starting natural polymers for the production of cellulose esters and ethers are not coded, see also A10-E: section for the appropriate process involved. This section does not cover wood or the use of cellulose paper making fibres such as wood pulp.

A03-A	**POLYSACCHARIDES** For chitosan see A10-E09.
A03-A	**Polysaccharides** Non-cellulosic e.g. starch, dextran, chitin.
A03-A00A	**. Uses** Prior to 1986 see A03-A. **1986**
A03-A01	**General**
A03-A01A	**. Textiles, fibres** Prior to 1970 see A03-A01. **1970**
A03-A02	**Cellulose acetate**
A03-A02A	**. Textiles, fibres** Prior to 1970 see A03-A02. **1970**
A03-A03	**Other cellulose esters** e.g. cellulose nitrate (nitrocellulose), cellulose acetate butyrate.
A03-A04	**Cellulose ethers** e.g. carboxymethyl cellulose, hydroxyethyl cellulose.
A03-A04A	**. Uses** Prior to 1970 see A03-A04. **1970**
A03-A04A1	**.. Medical, dental, cosmetic, veterinary; food** Prior to 1986 see A03-A04A. **1986**
A03-A04B	**. Preparation of cellulose ethers** **2002**
A03-A05	**Cellulose derivatives and others** Including regenerated cellulose e.g. rayon.
A03-A05A	**. Textiles, fibres** Prior to 1970 see A03-A05. **1970**
A03-B	**NATURAL RUBBERS**
A03-B	**Natural rubbers** including isomers such as balata, gutta percha.
A03-C	**OTHER NATURAL POLYMERS**
A03-C01	**Proteinaceous polymers** e.g. gelatin, casein, collagen.

A03-C02 **Natural resins or gums, rosin (abietic acid), lignin**

A03-C03 **Bituminous plastics**
e.g. asphalt, lignite. Prior to 1977 see A03-C.
1977

A03-C04 **Petroleum resins**
i.e. low polymers prepared synthetically from mixed unsaturates, typically found in refinery streams - aliphatic olefins, acyclic, cyclic and bicyclic dienes; styrenes and indenes. Prior to 1977 see A03-C.
1977

A03-C **Other natural polymers (exc. polysaccharides/natural rubbers/resins/gums/petroleum resin etc.)**
e.g. terpene resins, polymerised drying oils, frankincense resin, myrrh resin.

A04 ADDITION POLYMERS

Polymers of the metal salts of olefinically unsaturated acids are coded according to the valency of the metal e.g. see A04-F04+ for sodium acrylate polymer and A04-B for calcium acrylate polymer. A reference to acrylic resin/polymer with no further details is coded A04-F01+. For acrylic fibres see A04-D02+ or A04-D03+ and A12-S05+. For acrylic sheets see A04-F01+, A04-F06+ and A12-S07+. For acrylic paints and coatings see A04-F01A1 and A12-B01+. A polymer belonging to a particular class in section A04, and also falling within the definition of the code A04-A, is assigned both codes e.g. a monoolefinic acrylate (co)polymer containing sulphur in the repeat unit is assigned appropriate codes A04-F06+ and A04-A06.

A04-A **MISCELLANEOUS (CO)POLYMERS**
Excluding A04-B: to A04-G:.

A04-A01 **Monomers containing both double and triple C-C bonds**
e.g. vinyl acetylene.

A04-A02 **Monomers containing triple C-C bonds only**
e.g. acetylene, propargyl alcohol.

A04-A03 **Monomers containing more than two double C-C bonds**
e.g. trimethylolpropane triacrylate, diallyl maleate, pentaerythritol tetraacrylate, polyallyl sucrose (for Carbopols® with A04-F04+).

A04-A04 **Monomers containing a nitroso gp.**
e.g. trifluoronitrosomethane.

A04-A05 **Carbon monoxide copolymers**
1994
Previous code(s): A04-A

A04-A06 **Monomers containing sulfur group**
e.g. acrylamide methylpropanesulfonic acid (with A04-D04+), styrene sulfonate (with A04-C).
2024
Previous code(s): A04-A

A04-A07 **Monomers containing silicon group**
e.g. vinyltriethoxysilane (with A04-F).
2024
Previous code(s): A04-A

A04-A08 **Monomers containing phosphorus group**
2026
Previous code(s): A04-A

A04-A **Other miscellaneous addition (co)polymers**
Others e.g. unsaturated monomers containing elements other than C, H, O, N and halogen (excluding metal salts of unsaturated carboxylic acids (e.g. sodium acrylate) for which see the corresponding acid).

A04-B **POLYMERS FROM DIOLEFINIC MONOMERS**

A04-B01 **General**
Applied from the start of Plasdoc to the end of 1985 and was then discontinued.
1966-1985

A04-B01A . **Production**
Prior to 1970 see A04-B01.
1970

A04-B01B . **Compositions**
Prior to 1986 see A04-B01.
1986

A04-B01C . **Fabrication**
Prior to 1986 see A04-B01.
1986

A04-B01D . **Treatment**
Prior to 1986 see A04-B01.
1986

A04-B01E . **Uses**
Prior to 1986 see A04-B01.
1986

A04-B02 **Butadiene homopolymer**
Including butadiene rubber.

A04-B02A . **Production**
Prior to 1970 see A04-B02.
1970

A04-B03 **Butadiene with styrene**
Including SBR.

A04-B03A . **Production**
Prior to 1970 see A04-B03.
1970

A04-B04 **Butadiene with acrylonitrile**
Including NBR.

A04-B05 **Butadiene with other monomers**
Excluding with styrene for which see A04-B03+; with acrylonitrile for which search A04-B04 and ABS for which search A04-C03.

A04-B06 **Isoprene homopolymer**

A04-B07 **Isoprene copolymers**
Excluding butyl rubber for which see A04-G05A.

A04-B08 **Chloroprene (co)polymers**
e.g. neoprene; including other haloprenes.

A04-B09 **Esters containing 2 non-conjugated C-C double bonds**
e.g. diallyl phthalates, allyl (meth)acrylate, ethylene glycol bis (allyl carbonate).

A04-B10 **Aromatic diolefinic**
Excluding A04-B09; e.g. divinyl benzene.

A04-B11 **Bismaleimide (co)polymers.**
1994
Previous code(s): A04-B

A04-B12 **Diallyl dimethylammonium chloride (co)polymers**
(Co)polymers formed from diallyl dimethylammonium chloride; e.g. Polydiallyl dimethylammonium chloride, PDADMAC (co)polymers.
2021

A04-B **Other polymers from diolefinic monomers**
e.g. dicyclo-pentadiene, piperylene.

A04-C **POLYMERS FROM (SUBSTITUTED) AROMATIC MONOOLEFINIC MONOMERS**

A04-C01 **General**

A04-C01A . **Production, compositions**
Prior to 1986 see A04-C01.
1986

A04-C02 **Styrene homopolymer**
For expanded polystyrene see A12-S01+ only. Applied during the pre-70 (pre-CPI) accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A04-C02A . **Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-C02.
pre-1970

A04-C02B . **Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-C02.
pre-1970

A04-C02B1 .. **High impact polystyrene**
1994
Previous code(s): A04-C02+

A04-C02C . **Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-C02.
pre-1970

A04-C02D . **Treatment**
Applied during the accession number range 80,000P (Pre-CPI) to date. Prior to 80,000P see A04-C02.
pre-1970

A04-C02E . **Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-C02.
pre-1970

A04-C03 **Styrene with acrylonitrile and butadiene**
i.e. ABS.

A04-C04 **Styrene with other monomers**
Excluding with butadiene for which see A04-B03+; for ABS see A04-C03.

A04-C04A . **Production, compositions**
Prior to 1970 see A04-C04.
1970

A04-C04B . **Styrene with acrylonitrile**
SAN.
1994
Previous code(s): A04-C04+, A04-D04+

A04-C05 **Alkyl substituted styrenes (co)polymers**
Hydrocarbon only e.g. vinyl toluene, alpha-methyl styrene. Prior to 1986 see A04-C.
1986

A04-C **Other polymers from (substituted) aromatic monoolefinic monomers**
e.g. vinyl naphthalene, indene, coumarone, styrene sulphonic acid (with A04-A06), vinyl phenol, chloromethyl styrene, cinnamic acid.

A04-D **POLYMERS FROM SUBSTITUTED MONOOLEFINIC MONOMERS CONTAINING N**

A04-D01 **General**

A04-D02 **(Meth)acrylonitrile homopolymers**

A04-D02A . **Production, compositions**
Prior to 1970 see A04-D02.
1970

A04-D02B . **Fibres, textiles**
Prior to 1970 see A04-D02.
1970

A04-D03 **(Meth)acrylonitrile copolymers**
Excluding ABS for which see A04-C03 and acrylonitrile with butadiene for which see A04-B04.

A04-D03A . **Production, compositions**
Prior to 1970 see A04-D03.
1970

A04-D03B . **Fibres, textiles**
Prior to 1970 see A04-D03.
1970

A04-D04 **(Meth)acrylamide (co)polymers (optionally substituted)**

A04-D04A . **Uses**
Prior to 1970 see A04-D04.
1970

A04-D04A1 .. **Adhesives and binders; coatings; (electro)photographic, laboratory, optical**
Prior to 1986 see A04-D04A.
1986

A04-D04A2 .. **Mining, chemical engineering**
Prior to 1986 see A04-D04A.
1986

A04-D05 **Vinyl lactams (co)polymers**

A04-D05A . **Vinyl pyrrolidones (co)polymers**
1994
Previous code(s): A04-D05

A04-D06 **Vinyl carbazoles (co)polymers**

A04-D07 **Vinyl pyridines (co)polymers**

A04-D08 **Other vinyl heterocyclics (co)polymers; (substituted) maleimides**
Excluding A04-D05, A04-D06, A04-D07. Prior to 1977 see A04-D.
1977

A04-D09 **Other amines (co)polymers**
Excluding A04-D02 to A04-D08; including (quaternary ammonium) salts thereof, e.g. aminoalkyl (meth) acrylates, non-vinyl heterocyclic amines. Prior to 1977 see A04-D.
1977

A04-D **Other polymers from substituted monoolefinic monomers containing N**
e.g. vinylidene cyanide, cyanoacrylates.

A04-E **POLYMERS FROM NITROGEN-FREE, HALOGEN-SUBSTITUTED ALIPHATIC MONOOLEFINIC MONOMERS**

A04-E01 **General**

A04-E02 **Vinyl chloride homopolymer**
Applied during the pre-70 (pre-CPI) accession number range 60,0001P - 79,999P and was then discontinued.
1966-1967

A04-E02A . **Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-E02.
pre-1970

A04-E02B . **Compounding**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-E02.
pre-1970

A04-E02C . **Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-E02.
pre-1970

A04-E02D . **Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-E02.
pre-1970

A04-E02E . **Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-E02.
pre-1970

A04-E02E1 .. **Chemical, electrical and mechanical engineering; building, civil engineering**
Prior to 1970 see A04-E02E.
1970

A04-E02E2 .. **Adhesives and binders; coatings**
Prior to 1970 see A04-E02E.
1970

A04-E03 **Vinyl chloride copolymers**
Applied from the start of Plasdoc to the end of 1985 and was then discontinued.
1966-1967

A04-E03A . **Production**
Prior to 1970 see A04-E03.
1970

A04-E03B . **Compositions**
Prior to 1986 see A04-E03.
1986

A04-E03C . **Fabrication**
Prior to 1986 see A04-E03.
1986

A04-E03D . **Treatment**
Prior to 1986 see A04-E03.
1986

A04-E03E . **Uses**
Prior to 1986 see A04-E03.
1986

A04-E04 **Vinyl bromide, iodide homopolymers**

A04-E05 **Vinyl bromide, iodide copolymers**

A04-E06 **Vinylidene halide homopolymers**
Excluding fluoride for which see A04-E10B.

A04-E07 **Vinylidene halide copolymers**
Excluding fluoride for which see A04-E10B.

A04-E08 **Tetrafluoroethylene homopolymer (PTFE)**

A04-E08A . **Production, compositions**
Prior to 1970 see A04-E08.
1970

A04-E08B . **Mechanical engineering uses**
Prior to 1970 see A04-E08.
1970

A04-E09 **Tetrafluoroethylene copolymers**

A04-E10 **Fluorine containing other or general**

A04-E10A . **Vinyl fluoride (co)polymers**
Prior to 1986 see A04-E10.
1986

A04-E10B . **Vinylidene fluoride (co)polymers**
Prior to 1986 see A04-E10.
1986

A04-E10C . **F-containing ether (co)polymers**
Prior to 1986 see A04-E10.
1986

A04-E10D . **Other specific F-containing (co)polymers**
e.g. hexafluoropropylene, chlorotrifluoroethylene, fluoro-acrylates. Prior to 1986 see A04-E10.
1986

A04-E **Other polymers from nitrogen-free, halogen-substituted aliphatic monoolefinic monomers**
e.g. allyl chloride, chloroethyl vinyl ether.

A04-F **POLYMERS FROM NITROGEN- AND HALOGEN-FREE, SUBSTITUTED ALIPHATIC MONOOLEFINIC MONOMERS**

A04-F01 **General**

A04-F01A **. Uses**
Prior to 1986 see A04-F01.
1986

A04-F01A1 **.. Adhesives and binders; coatings**
Prior to 1986 see A04-F01.
1986

A04-F02 **Aldehyde (co)polymers**
e.g. acrolein.

A04-F03 **Ketone (co)polymers**
e.g. methyl vinyl ketone, methyl isopropenyl ketone.

A04-F04 **(Meth)acrylic acid or anhydride (co)polymers**
Including metal and ammonium salts.

A04-F04A **. Production, compositions**
Prior to 1970 see A04-F04.
1970

A04-F04B **. Adhesives and binders; coatings**
Prior to 1970 see A04-F04.
1970

A04-F05 **Other carboxylic acid or anhydride (co)polymers**
Excluding A04-F04+; including metal and ammonium salts, e.g. maleic anhydride, itaconic acid.

A04-F06 **(Meth)acrylic ester (co)polymers**
Including glycidyl acrylates (with A05-A04). Applied during the pre-70 (pre-CPI) accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A04-F06A **. Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-F06.
pre-1970

A04-F06B **. Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-F06.
pre-1970

A04-F06C **. Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-F06.
pre-1970

A04-F06D **. Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-F06.
pre-1970

A04-F06E **. Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-F06.
pre-1970

A04-F06E1 **.. Adhesives, coatings**
Applied from the start of 1970 to the end of 1985 and was then discontinued. Prior to 1970 see A04-F06E.
1970-1985

A04-F06E2 **.. Textile coatings and finishes**
Prior to 1970 see A04-F06E.
1970

A04-F06E3 **.. Oil and fuel additives**
Prior to 1970 see A04-F06E.
1970

A04-F06E4 **.. (Electro)photographic, optical**
Prior to 1986 see A04-F06E.
1986

A04-F06E5 **.. Medical, dental, cosmetic and veterinary**
Prior to 1986 see A04-F06E.
1986

A04-F06E6 **.. Adhesives and binders**
Prior to 1986 see A04-F06E1.
1986

A04-F06E7 **.. Coatings**
Excluding A04-F06E2. Prior to 1986 see A04-F06E1.
1986

A04-F07 **Esters of unsaturated carboxylic acids and saturated alcohols (co)polymers**
Excluding A04-F06+; e.g. dibutyl maleate.

A04-F08 **Vinyl acetate homopolymer**

A04-F09 **Vinyl acetate copolymers**
Excluding ethylene-vinyl acetate copolymer (EVA) for which see A04-G07.

A04-F10 **Other vinyl carboxylate (co)polymers**
Excluding A04-F08, A04-F09; e.g. vinyl butyrate, vinyl stearate.

A04-F11 **Ether (co)polymers**
e.g. vinyl isobutyl ether, allyl ethers.

A04-F **Other polymers from nitrogen- and halogen-free, substituted aliphatic monoolefinic monomers**
e.g. vinylene carbonate, allyl alcohol. For polyvinyl acetal, butyral and formal see A10-E02; for polyvinyl alcohol (PVA) see A10-E09+. Excluding vinyl or allyl inorganic acids (and their metal salts) or their esters, for which see A04-A.

A04-G **POLYMERS FROM UNSUBSTITUTED (CYCLO)-ALIPHATIC MONOOLEFINIC MONOMERS**

A04-G01 **General**
Applied during pre-70 (pre-CPI) accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A04-G01A **. Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G01.
pre-1970

A04-G01B **. Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G01.
pre-1970

A04-G01C **. Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G01.
pre-1970

A04-G01D **. Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G01.
pre-1970

A04-G01E **. Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G01.
pre-1970

A04-G02 **Ethylene homopolymer**
Applied during pre-1970 (pre-CPI) accession number range 60,000P - 79,999P and was then discontinued.
1966-1967

A04-G02A **. Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G02.
pre-1970

A04-G02B **. Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G01.
pre-1970

A04-G02C **. Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G02.
pre-1970

A04-G02D **. Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G02.
pre-1970

A04-G02E **. Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G02.
pre-1970

A04-G02E1 **.. Adhesives and binders; coatings; textiles**
Prior to 1970 see A04-G02E.
1970

A04-G02E2 **.. Films; packaging**
Prior to 1970 see A04-G02E.
1970

A04-G02E3 **.. (Electro)photographic; medical; dental, cosmetic and veterinary; household, office**
Prior to 1970 see A04-G02E.
1970

A04-G02E4 **.. Electrical and mechanical; engineering; building, civil engineering**
Prior to 1986 see A04-G02E.
1986

A04-G03 **Propylene homopolymer**
Applied during pre-1970 (pre-CPI) accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A04-G03A **. Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G03.
pre-1970

A04-G03B **. Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G03.
pre-1970

A04-G03C **. Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G03.
pre-1970

A04-G03D **. Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G03.
pre-1970

A04-G03E **. Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A04-G03.
pre-1970

A04-G03E1 **.. Films; packaging; (electro)photographic; medical, dental, cosmetic and veterinary; household, office**
Prior to 1970 see A04-G03E.
1970

A04-G04 **Butene-1 (co)polymers**

A04-G05 **Isobutene (co)polymers**
Excluding with isoprene for which see A04-G05A.

A04-G05A **. Butyl rubber**
i.e. isobutene-isoprene copolymer. Prior to 1970 see A04-G05.
1970

A04-G06 **Ethylene copolymers with olefin-1**
Including LLDPE and terpolymers such as EPDM.

A04-G06A **. Production, compositions**
Prior to 1970 see A04-G06.
1970

A04-G07 **Ethylene with vinyl acetate (EVA)**

A04-G08 **Ethylene copolymers**
Excluding A04-G06+, A04-G07. See also A04-G11.

A04-G08A **. Ethylene copolymers with unsaturated acids, anhydrides or esters**
For ionomers see A10-E21B. Prior to 1986 see A04-G08.
1986

A04-G09 **Propylene copolymers**
Excluding A04-G06+.

A04-G10 **4-Methylpentene-1 (co)polymers**

A04-G11 **Ethylene co-polymers, general**
Indexed where three or more copolymers of ethylene are present.
1994
Previous code(s): A04-G01+, A04-G06+, A04-G07, A04-G08+

A04-G **Other polymers from unsubstituted (cyclo)-aliphatic monoolefinic monomers**
e.g. from hexene-1, norbornene, vinyl cyclohexane; including polyalkenamers i.e. involving ring opening without affecting C-C double bond.

A04-H **ADDITION TYPE RESINS**
2002

A04-H00H **General addition type resin**
2002

A05 CONDENSATION POLYMERS

A05-A **EPOXY RESINS**
i.e. any compound containing 2 or more epoxy groups. For polymers containing epoxy groups by modification see A10-E+ e.g. epoxidised novolacs see A10-E08C. For acrylated epoxy resins (vinyl ester resins) see A10-E07B.

A05-A01 **General**
Applied during the pre-70 (pre-CPI) accession number range 60,000P - 79,999P and was then discontinued.
1966-1967

A05-A01A **. Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-A01.
pre-1970

A05-A01B **. Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-A01.
pre-1970

A05-A01B1 **.. With crosslinking agent or system**
Prior to 1986 see A05-A01B.
1986

A05-A01C **. Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-A01.
pre-1970

A05-A01D **. Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-A01.
pre-1970

A05-A01E **. Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-A01.
pre-1970

A05-A01E1 **.. Adhesives, coatings**
Applied from the start of 1970 to the end of 1985 and was then discontinued. Prior to 1970 see A05-A01E.
1970-1985

A05-A01E2 **.. Electrical engineering**
Including electrical encapsulation. Prior to 1970 see A05-A01E.
1970

A05-A01E3 **.. Adhesives and binders**
Prior to 1986 see A05-A01E1.
1986

A05-A01E4 **.. Coatings**
Prior to 1986 see A05-A01E1.
1986

A05-A02 **Glycidyl ethers of phenols**
e.g. bisphenol-A diglycidyl ether.

A05-A03 **Glycidyl ethers of alcohols**
e.g. butanediol diglycidyl ether.

A05-A04 **Other glycidyl cpds.**
e.g. diglycidyl carboxylates; diglycidyl derivatives of amines; (co)polymers of glycidyl acrylates (with A04-F06+); polyglycidyl derivatives of isocyanuric acid.

A05-A05 **Cycloaliphatic epoxides**
e.g. vinyl cyclohexene diepoxide.

A05-A **Other epoxy resins**
e.g. butadiene diepoxide.

A05-B **AMINOPLASTS**
e.g. reaction products of aldehyde/ketone with amine/amide, usually involving alkylolation and then polycondensation. For etherified aminoplasts e.g. alkoxylated MF see A10-E08C.

A05-B01 **General**

A05-B02 **Melamine-formaldehyde (MF) resins**
For 'alkylated' e.g. butylated or methoxy- methylolated MF resins see A10-E08C.

A05-B03 **Urea-formaldehyde (UF) resins**

A05-B04 **Ethylene- or propylene-urea (derivatives)-formaldehyde resins**

A05-B **Other aminoplasts**
e.g. dicyandiamide-, benzoguanamine-formaldehyde resins.

A05-C **PHENOPLASTS**
i.e. reaction products of aldehyde/ketone with phenol(s) usually involving alkylolation e.g. methylolation and then polycondensation. Includes resols and novolacs.

A05-C01 **General**

A05-C01A . **Production, compositions**
Prior to 1970 see A05-C01.
1970

A05-C01B . **Uses**
Prior to 1986 see A05-C01.
1986

A05-C01B1 .. **Adhesives and binders; coatings; laminates; reinforced plastics**
Prior to 1986 see A05-C01.
1986

A05-C01B2 .. **(Electro)photographic use**
1994
Previous code(s): A05-C01B

A05-C02 **Polyhydric phenols and any aldehyde**
e.g. resorcinol-formaldehyde resins.

A05-C03 **Monohydric, mononuclear phenols and formaldehyde**
e.g. phenol-formaldehyde, cresol-formaldehyde.

A05-C03A . **Adhesives and binders; coatings; laminates; reinforced plastics**
Prior to 1986 see A05-C03.
1986

A05-C04 **Monohydric, mononuclear phenols and any other aldehyde**

A05-C **Other phenoplasts**
e.g. from monohydric, polynuclear phenols.

A05-D **UNSATURATED LINEAR POLYMERS**
For all non-linear unsaturated polyesters see A05-E08. A reference to polyester with no further details is assumed to be of the type A05-D02+ if used for crosslinkable /reinforced compositions or products.

A05-D01 **General**

A05-D02 **Unsaturated polyesters from unsaturated dibasic acids**
Acids include derivatives e.g. acid halides, anhydrides, esters, metal salts. Applied during the pre-1970 (pre-CPI) accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A05-D02A . **Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-D02.
pre-1970

A05-D02B . **Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-D02.
pre-1970

A05-D02C . **Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-D02.
pre-1970

A05-D02D . **Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-D02.
pre-1970

A05-D02E . **Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-D02.
pre-1970

A05-D02E1 .. **Building, civil engineering; laminates**
Prior to 1970 see A05-D02E.
1970

A05-D **Other unsaturated linear polymers [exc. unsaturated polyesters from unsaturated dibasic acids]**
e.g. unsaturated polyesters from saturated dibasic acids and unsaturated dihydric alcohols.

A05-E **SATURATED POLYESTERS**
Including aromatic unsaturation, but excluding olefinic or acetylenic unsaturation. Acids include derivatives e.g. acid halides, anhydrides, esters, metal salts. Dihydric alcohols and phenols include derivatives e.g. acetates, haloformates. Polyesters which are subsequently used for polyesterurethanes are only searchable in A05-E: if their production is novel. For all polyesterurethanes see A05-G02 except for foams when see A12-S02+. A reference to polyester with no further details is assumed to be of the type A05-E: section if used for fibres, films, paints and thermoplastic polyester mouldings.

A05-E01 **General**

A05-E01A . **Production, compositions**
Applied from the start of 1970 to the end of 1985 and was then discontinued. Prior to 1970 see A05-E01.
1970-1985

A05-E01A1 .. **Production**
Prior to 1986 see A05-E01A.
1986

A05-E01A2 .. **Compositions**
Prior to 1986 see A05-E01A.
1986

A05-E01B . **Textiles, textile treatments**
Prior to 1970 see A05-E01.
1970

A05-E01B1 .. **Mechanical treatment**
Prior to 1986 see A05-E01B.
1986

A05-E01B2 .. **Chemical treatment**
Including dyeing. Prior to 1986 see A05-E01B.
1986

A05-E01B3 .. **Specific uses**
Prior to 1986 see A05-E01B.
1986

A05-E01C . **Fabrication, treatment**
Excluding A05-E01B+. Prior to 1986 see A05-E01.
1986

A05-E01D . **Uses**
Excluding A05-E01B+. Prior to 1986 see A05-E01.
1986

A05-E01D1 .. **Adhesives and binders; coatings**
Prior to 1986 see A05-E01.
1986

A05-E01D2 .. **Electrical engineering**
Prior to 1986 see A05-E01.
1986

A05-E01D3 .. **Films; packaging**
Prior to 1986 see A05-E01.
1986

A05-E02 **From saturated, (cyclo)aliphatic, dicarboxylic acids and dihydric alcohols or phenols; hydroxyacids; or lactones and glycolides**

A05-E02A . **From saturated, (cyclo)aliphatic, dicarboxylic acids and dihydric alcohols or phenols**
2005

A05-E02B . **From hydroxyacids**
e.g. polyhydroxybutyrate, polyhydroxyvalerate.
2005

A05-E02C . **From lactones and glycolides**
2005

A05-E03 **From isophthalic acid and dihydric alcohols or phenols**
Excluding from ring substituted isophthalic e.g. 5-sulfoisophthalic acid, for which see A05-E05. Including from copolymers of isophthalic acid and terephthalic acid.

A05-E04 **From terephthalic acid and dihydric alcohols or phenols**
Excluding from ring substituted terephthalic, for which see A05-E05. Applied during the pre-70 (pre-accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A05-E04A . **Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-E04.
pre-1970

A05-E04B . **Compounding**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-E04.
pre-1970

A05-E04C . **Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-E04.
pre-1970

A05-E04D . **Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-E04.
pre-1970

A05-E04E . **Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-E04.
pre-1970

A05-E05 **From other aromatic di-carboxylic acids and dihydric alcohols or phenols**
i.e. excluding A05-E03, A05-E04+, e.g. from 5-sulfoisophthalic acid. For saturated polyesters based on naphthalene dicarboxylic acid see A05-E05A.

A05-E05A . **From naphthalene dicarboxylic acid and dihydric alcohol or phenol**
1994
Previous code(s): A05-E05

A05-E06 **Polycarbonates; poly-thiocarbonates**

A05-E06A . **Production; compositions**
Prior to 1986 see A05-E06.
1986

A05-E06B . **Uses**
Prior to 1986 see A05-E06.
1986

A05-E07 **Polyesteramides; polyesterimides**
With A05-J01+.

A05-E08 **Alkyd resins**
All types including glyptal resins, non-linear polyesters, drying oil or non-drying oil derived polyesters. Prior to 1970 see A05-E.
1970

A05-E09 **Polyetheresters**
e.g. Hytrel®. Prior to 1986 see the appropriate A05-E: section and A05-H: section e.g. for production of polybutylene-terephthalate polytetramethylene glycol (Hytrel®) see A05-E04A and A05-H05.
1986

A05-E10 **Polyarylates**
Prior to 1986 see A05-E01+, A05-E03, A05-E04+ and A05-E05.
1986

A05-E **Other saturated polyesters**
e.g. from dibasic non-carboxylic acids e.g. benzenedisulfonic acid; from heterocyclic diacids.

A05-F **POLYAMIDES**
Contain -CON(R)- groups in the backbone of the repeat unit. Including from S containing acids. Excluding polyesteramides for which see A05-E07. Acids include derivatives e.g. acid halides, anhydrides, esters, metal salts.

A05-F01 **General**
Applied during the pre-1970 (pre-CPI) accession number range 60,0001P - 79,999P and was then discontinued.
1966-1967

A05-F01A . **Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-F01.
pre-1970

A05-F01B . **Compositions**
Applied from 80,000P (pre-CPI) to the end of 1985 and was then discontinued. Prior to 80,000P see A05-F01.
1967-1985

A05-F01B1 .. **With additives**
Including polymeric. Prior to 1986 see A05-F01B.
1986

A05-F01B2 .. **With polymers**
i.e. mixture. Prior to 1986 see A05-F01B.
1986

A05-F01C . **Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-F01.
pre-1970

A05-F01D . **Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-F01.
pre-1970

A05-F01E . **Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-F01.
pre-1970

A05-F01E1 .. **Textiles**
Prior to 1970 see A05-F01E.
1970

A05-F01E2 .. **Electrical and mechanical engineering**
Prior to 1970 see A05-F01E.
1970

A05-F01E3 .. **Films; packaging; medical, dental, cosmetic and veterinary; (electro) photographic**
Prior to 1986 see A05-F01E.
1986

A05-F02 **From aliphatic dibasic acid(s) and any diamine(s)**
e.g. nylon 6:6 and nylon 6:10.

A05-F03 **From lactam(s) and/or amino acid(s)**
e.g. nylon 6, nylon 11.

A05-F04 **Polyaminoamides from polymerised vegetable oil acids and polyamino components (Versamids®)**

A05-F05 **Polyamides from aromatic dicarboxylic acid(s) and aromatic diamine(s) only**
Including aramids, Kevlar®. Prior to 1986 see A05-F.
1986

A05-F **Other polyamides**
e.g. from di-isocyanates and di-acids; polyamideimides (with A05-J01+).

A05-G **POLYURETHANES**
Contain -NHCOO- groups in the backbone of the repeat unit. For polyurethane foams see A12-S02+ only. Includes polythiourethanes. For polyurethane polyurea see also A05-J04. Isocyanates may be blocked isocyanates (with A02-C).

A05-G01 **General**
Applied during the pre-70 (pre-CPI) accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A05-G01A **. Production**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-G01.
pre-1970

A05-G01B **. Compositions**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-G01.
pre-1970

A05-G01C **. Fabrication**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-G01.
pre-1970

A05-G01D **. Treatment**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-G01.
pre-1970

A05-G01E **. Uses**
Applied during the accession number range 80,000P (pre-CPI) to date. Prior to 80,000P see A05-G01.
pre-1970

A05-G01E1 **.. Coatings**
Prior to 1970 see A05-G01E.
1970

A05-G01E2 **.. Electrical and mechanical engineering**
Prior to 1986 see A05-G01E.
1986

A05-G02 **From polyester polyol(s) and isocyanate(s)**
For polyester polyols do not search code(s) from A05-E:, see note under Polyesters.

A05-G03 **From polyether polyol(s) and isocyanate(s)**
For polyether polyols do not search code(s) from A05-H:, see note under Polyethers.

A05-G04 **From monomeric polyols and isocyanate**
e.g. from butanediol.

A05-G **Other polyurethanes**
e.g. from polybutadiene diol and isocyanate(s); from bis-haloformates and diamines.

A05-H **POLYETHERS**
Polyethers which are subsequently used for polyetherurethanes are only searchable in A05-H: if their production is novel. For all polyetherurethanes see A05-G03 except for foams when see A12-S02+. For end modified polyalkylene oxides see A10-E+ e.g. for polyoxyethylene nonylphenol ether see A10-E08B.

A05-H01 **General**

A05-H01A **. Production, compositions**
Prior to 1986 see A05-H01.
1986

A05-H01B **. Uses**
Prior to 1986 see A05-H01.
1986

A05-H02 **Oxymethylene (co)polymers (acetal resin)**
Including formaldehyde homologues e.g. trioxane.

A05-H02A **. Production, compositions**
Prior to 1970 see A05-H02.
1970

A05-H03 **Oxyethylene (co)polymers**

A05-H03A **. Production, compositions general**
Prior to 1970 see A05-H03.
1970

A05-H03A1 .. **Oxyethylene homopolymer production**
2002

A05-H03A2 .. **Copolymer production**
2002

A05-H03A3 .. **Oxyethylene homopolymer compositions**
2002

A05-H03A4 .. **Copolymer compositions**
2002

A05-H04 **Oxypropylene (co)polymers**
Including epihalohydrin polymers.

A05-H04A . **Production, compositions general**
2002

A05-H04A1 .. **Oxypropylene homopolymer production**
2002

A05-H04A2 .. **Copolymer production**
2002

A05-H04A3 .. **Oxypropylene homopolymer compositions**
2002

A05-H04A4 .. **Copolymer compositions**
2002

A05-H05 **From furans and derivatives**
e.g. polytetrahydrofuran.

A05-H06 **Phenoxy resins**
i.e. from dihydric phenols, including bisphenols, and epihalohydrins; excluding A05-A02.

A05-H07 **Aromatic polyethers**
Excluding A05-H06.

A05-H07A . **Polyarylene ethers**
1994
Previous code(s): A05-H07

A05-H **Other polyethers**
e.g. Polyglycerol

A05-J **OTHER POLYMERS**

A05-J01 **Polyimides**
e.g. formed from a tetracarboxylic acid and a diamine. Including polyamic acid. For polyamideimides see also A05-F.

A05-J01A . **Production, compositions**
Prior to 1986 see A05-J01.
1986

A05-J01B . **Uses**
Prior to 1986 see A05-J01.
1986

A05-J02 **Heterocyclic polymers produced by cyclisation during polycondensation**
Including: e.g. polyhydantoins, polyparabanic acid, polybenzimidazoles, polyisocyanurates, polycyanurates, polyoxazoli(di)nes, polydopamine, polyuretidione, polybenzoxazoles. Excluding polyimides, for which code from A05-J01+.

A05-J03 **Polyanhydrides**

A05-J04 **Polyureas; polythioureas**
e.g. from polyamines and polyisocyanates.

A05-J05 **Polysulfides; polyepisulfides (polythioethers, thiokols); polyene-polythiol polymers**

A05-J05A . **Poly(arylene sulfides)**
e.g. polyphenylene sulfide.
1994
Previous code(s): A05-J05

A05-J06 **Polysulfones**
All types including polyethers containing sulfone group(s) from 1986. For earlier references see A05-H07.

A05-J07 **Polyalkyleneimines**
e.g. polyethylene imine.

A05-J08 **Aldehyde or ketone condensates**
Excluding A05-B:, A05-C:, A05-H02+; e.g. naphthalenesulfonic acid-formaldehyde condensates, furfural resins. Prior to 1970 see A05-J.
1970

A05-J09 **Amine-epihalohydrin polymers; polycarbodiimides, polyhydrazides**
Including polybrene, polyionene. Prior to 1977 see A05-J.
1977

A05-J10 **Polyketones**
Including poly(ether) ether ketones e.g. PEEK®. Prior to 1986 see A05-J and A05-H07 for structures such as (OCC6H4COOC6H4)n and (OC6H4OC6H4COC6H4)n respectively.
1986

A05-J11 **Polyimines**
Excluding polyalkylene imines for which see A05-J07; A05-J09; e.g. polyamine-polymaleimide resins, polyanilines, biguanide polymers. Prior to 1986 see A05-J.
1986

A05-J12 **Polypyrroles and polythiophenes**
Optionally substituted.
1994
Previous code(s): A05-J

A05-J13 **(Methylene)Arylene polymer**
Includes e.g. poly-p-xylylene, polyfluorenes, xylok resins (phenol-aralkyl resin).
2022

A05-J **Other condensation polymer types**
Excluding A05-A01 to A05-J13; e.g.furan resins (from furfuryl alcohol), Friedel-Crafts resins and phenol- terpene resins.

A05-K **CONDENSATION TYPE RESINS**
2002

A05-K00K **General condensation type resin**
2002

A06 INORGANIC POLYMERS

Natural inorganic polymers such as silicates are not indexed in section A.

A06-A **SILICON POLYMERS**
Including silicones, polysiloxanes, polysilazanes.

A06-A **General**
Applied during the pre-1970 (pre-CPI) accession number range 60,001P - 79,999P and was then discontinued.
1966-1967

A06-A00A **. Production**
Applied during the accession number range 80,000P (pre-CPI to date). Prior to 80,000P see A06-A.
pre-1970

A06-A00B **. Compositions**
Applied during the accession number range 80,000P (pre-CPI to date). Prior to 80,000P see A06-A
pre-1970

A06-A00C **. Fabrication**
Applied during the accession number range 80,000P (pre-CPI to date). Prior to 80,000P see A06-A.
pre-1970

A06-A00D **. Treatment**
Applied during the accession number range 80,000P (pre-CPI to date). Prior to 80,000P see A06-A.
pre-1970

A06-A00E **. Uses**
Applied during the accession number range 80,000P (pre-CPI to date). Prior to 80,000P see A06-A.
pre-1970

A06-A00E1 **.. Adhesives and binders; coatings, textile treatment**
Prior to 1970 see A06-A00E.
1970

A06-A00E2 **.. Chemical, electrical and mechanical engineering**
Prior to 1970 see A06-A00E.
1970

A06-A00E3 **.. Medical, dental, cosmetic and veterinary**
Prior to 1986 see A06-A00E.
1986

A06-A00E4 **.. (Electro)photographic; printing; optical**
Prior to 1986 see A06-A00E.
1986

A06-B **PHOSPHORUS POLYMERS**

A06-B **Phosphorus polymers**
i.e. Phosphorus present in repeat unit and not by modification e.g. polyphosphazenes.

A06-C **BORON POLYMERS**

A06-C **Boron polymers**
i.e. Boron present in repeat unit and not by modification e.g. polycarboranes.

A06-D **METAL OR METALLOID CONTAINING POLYMERS**

A06-D01 **Alum(in)oxanes**
1994
Previous code(s): A06-D

A06-D **Metal or metalloid containing polymers**
i.e. metal(loid) in repeat unit and not by modification; e.g. polygermanates, polytitanates.

A07 POLYMER BLENDS, AQUEOUS DISPERSIONS

A07-A **MIXTURES OF POLYMERS**
Used for genuine mixtures only and not for polymeric additives. N.B. Natural polymers are those coded in A03: addition polymers are those coded in A04: condensation polymers are those coded in A05: and A06:.

A07-A **Mixtures**
Applied from the start of Plasdoc to the end of 1969 and was then discontinued.
1966-1969

A07-A01 **Containing natural polymers**
Excluding natural rubber for which see A07-A02A. Prior to 1970 see A07-A.
1970

A07-A01A **. Containing tar, pitch, bitumen and/or petroleum resins**
Prior to 1986 see A07-A01.
1986

A07-A02 **Containing addition (co)polymers only**
The following sub-divisions are hierarchical e.g. a PVC-polyolefin mixture is coded A07-A02B only. Prior to 1970 see A07-A.
1970

A07-A02A **. From diolefinic monomers or natural rubber**
Prior to 1977 see A07-A02.
1977

A07-A02A1 **.. Containing butadiene (co)polymers**
Prior to 1986 see A07-A02A.
1986

A07-A02B **. From nitrogen or halogen containing monoolefinic monomers**
Prior to 1977 see A07-A02.
1977

A07-A02C **. From aliphatic substituted monoolefinic monomers not containing nitrogen or halogen**
Prior to 1977 see A07-A02.
1977

A07-A02D **. From monoolefinic aliphatic hydrocarbons**
No other polymer type in blend. Prior to 1977 see A07-A02.
1977

A07-A03 **Containing condensation polymers only**
Prior to 1970 see A07-A.
1970

A07-A03A **. Containing saturated polyester and/or polycarbonate**
Prior to 1986 see A07-A03.
1986

A07-A03B **. Containing epoxy resin**
Prior to 1986 see A07-A03.
1986

A07-A03C **. Containing polyamide, polyurethane and/or polyether**
Prior to 1986 see A07-A03.
1986

A07-A03D **. Containing unsaturated polyester, alkyd, aminoplast and/or phenoplast**
Prior to 1986 see A07-A03.
1986

A07-A03E **. Other condensation polymer(s)**
2020

A07-A04 **Containing mixtures of addition and condensation polymers**
Prior to 1970 see A07-A.
1970

A07-A04A **. Epoxy resin**
Prior to 1977 see A07-A04.
1977

A07-A04B **. Phenoplast and/or aminoplast**
Prior to 1977 see A07-A04.
1977

A07-A04C **. Unsaturated polyester**
Prior to 1977 see A07-A04.
1977

A07-A04D **. Saturated polyester**
Including alkyds. Prior to 1977 see A07-A04.
1977

A07-A04E **. Polyamide, polyurethane and/or polyether**
Prior to 1977 see A07-A04.
1977

A07-A04F **. Other condensation polymer(s)**
Prior to 1977 see A07-A04.
1977

A07-A05 **Unspecified polymer**
2002

A07-B AQUEOUS DISPERSIONS AND LATEXES

A07-B **General**

A07-B01 **Rubber latexes**
Natural or synthetic. Prior to 1970 see A07-B.
1970

A07-B02 **Acrylic polymer dispersions**
Prior to 1977 see A07-B.
1977

A07-B03 **Other addition polymer dispersions**
Prior to 1977 see A07-B.
1977

A07-B04 **Natural and/or condensation polymer dispersions**
Prior to 1977 see A07-B.
1977

A08 ADDITIVES

This section covers all the conventional additives or materials associated with polymers. Some of these directly affect the properties of polymers (plasticisers, antioxidants etc.) while others affect indirectly e.g. emulsifiers for emulsion polymerisation, biocides for marine paints etc. Polymeric additives (not blends for which see A07-A: section) are included. See appropriate A08-A: through A08-S: sections in addition to the appropriate polymer code(s). Coding A08-M09+ code may involve additional code from A08-R: section (e.g. A08-R03 for carbon black conductive filler) and from A09-A: section (e.g. A09-A03 for conductivity). Expanded (e.g. microballoons) fillers are coded in the appropriate code from A08-R: section. For syntactic foam see A12-W12. The starting materials, the intermediates, processes and the catalysts used in the production of non-polymeric additives are not coded.

A08-A **STABILISERS**

A08-A01 **General**
Including multi- functional e.g. one compound acting as heat and light stabiliser.

A08-A01A **. For addition polymers**
Prior to 1986 see A08-A01.
1986

A08-A01A1 **.. For aliphatic monoolefinic (co)polymers**
Hydrocarbon only. Prior to 1986 see A08-A01.
1986

A08-A01B **. For condensation polymers**
Prior to 1986 see A08-A01.
1986

A08-A02 **Against ionising radiation**

A08-A03 **Against light or UV**

A08-A04 **Against heat**

A08-A04A **. Metal containing**
Including boron and silicon.
Prior to 1970 see A08-A04.
1970

A08-A05 **Antiozonant**

A08-A06 **Antioxidant**

A08-A07 **Metal inhibitors, chelating and sequestering agents**

A08-A **Other stabilisers**
e.g. viscosity stabiliser, (water) treeing/tracking stabiliser.

A08-B **BLOWING AGENTS AND PORE FORMERS**
For intumescing agents search the appropriate code from this section and the appropriate code from A08-F.

A08-B01 **General**

A08-B02 **Compounds releasing carbon dioxide**
e.g. (bi)carbonate.

A08-B03 **Compounds releasing nitrogen**
e.g. azobisisobutyronitrile.

A08-B04 **Volatile materials; soluble materials**
i.e. pore formers.

A08-B04A **. Halohydrocarbon volatile blowing agents**
Includes perhalogenated compounds and Freons®.
1994
Previous code(s): A08-B04

A08-B04B **. Halogen free volatile blowing agents**
e.g. pressurised gases, hydrocarbons.
1994
Previous code(s): A08-B04

A08-B **Other blowing agents and pore formers**

A08-C **CROSSLINKERS, VULCANISERS, ACCELERATORS AND ACTIVATORS FOR ADDITION POLYMERS AND ETHYLENICALLY UNSATD. POLYMERS**

A08-C01 **General**

A08-C02 **Activators**
e.g. ZnO.

A08-C03 **Accelerators**
e.g. mercaptothiazoles, dithiocarbamates, guanidines, aminoaldehyde condensates.

A08-C04 **Sulphur (containing) crosslinkers**
Excluding A08-C05.

A08-C05 **Peroxides, persalts and other oxidisers crosslinkers**
e.g. hydroperoxides, potassium persulfate.

A08-C06 **Anti-scorch agents, cure retarders**

A08-C07 **Olefinically unsaturated monomeric crosslinkers**
e.g. ethyleneglycol dimethacrylate.
Prior to 1977 see A08-C.
1977

A08-C07A . **Styrene crosslinker**
Prior to 1986 see A08-C07.
1986

A08-C08 **Polymeric crosslinker**
Prior to 1977 see A08-C.
1977

A08-C09 **Phenol, nitrogen or metal containing compounds crosslinkers**
Excluding A08-C04, A08-C05, A08-C07, A08-C08; e.g. azobisisobutyronitrile, BF3. Prior to 1977 see A08-C.
1977

A08-C09A . **Isocyanate crosslinkers**
Excluding A08-C04, A08-C05, A08-C07 and A08-C08.
1994
Previous code(s): A08-C09

A08-C10 **Water crosslinker**
1994
Previous code(s): A08-C

A08-C **Other crosslinkers**
e.g. non-metallic halonium salts.

A08-D **CROSSLINKERS AND ACCELERATORS FOR OTHER POLYMERS**
Excluding those covered by A08-C.

A08-D01 **General**

A08-D02 **Acids and anhydrides**

A08-D03 **Amines**
e.g. aminophenols, imidazoles, hexamethylene tetramine, ammonium chloride, including hydrazine and hydrazides.

A08-D04 **Nitrogen containing compounds**
Excluding A08-D03 ; e.g. polyamides.

A08-D04A . **(Poly)isocyanates**
Optionally blocked. Prior to 1986 see A08-D04.
1986

A08-D05 **Metal containing compounds and polymers thereof**
Including boron, phosphorus, silicon. Prior to 1986 see A08-D.
1986

A08-D06 **Water crosslinker**
1994
Previous code(s): A08-D

A08-D **Other crosslinkers and accelerators for other polymers**
e.g. peroxides, persalts.

A08-E **DYES AND PIGMENTS**
i.e. surface colouring agents and bulk colouring agents respectively.

A08-E01 **General**
Including printing pastes.

A08-E02 **Inorganic pigments**
Including inorganic delustrants, brighteners e.g. TiO2.

A08-E03 **Organic dyes**

A08-E03A . **Azo**
Prior to 1970 see A08-E03.
1970

A08-E03A1 .. **Monoazo, water soluble**
Prior to 1977 see A08-E03A.
1977

A08-E03A2 .. **Monoazo, water insoluble**
Prior to 1977 see A08-E03A.
1977

A08-E03A3 .. **Dis- and polyazo**
Prior to 1977 see A08-E03A.
1977

A08-E03B . **Anthraquinone**
Prior to 1970 see A08-E03.
1970

A08-E03C . **Optical brighteners**
Including delustrants, flatt(en)ing agents. Prior to 1970 see A08-E03.
1970

A08-E04 **Organic pigments**

A08-F **FLAME RETARDANTS**
For intumescing agents search the appropriate code from this section and the appropriate code from A08-B:.

A08-F01 **General**

A08-F02 **Antimony containing compounds**
e.g. Sb2O3.

A08-F03 **Phosphorus containing compounds**
e.g. red phosphorus, tricresyl phosphate.

A08-F04 **Halogen containing compounds**

A08-F04A . **Polymeric**
e.g. chlorinated polyethylene. Prior to 1977 see A08-F04.
1977

A08-F04B . **Non-polymeric aromatic or heterocyclic compounds**
With direct halogen-ring bond(s) e.g. tetrabromo-bisphenol A. Prior to 1977 see A08-F04.
1977

A08-F04C **. Non-polymeric (cyclo)aliphatic compounds**
e.g. carbon tetrabromide, hexabromocyclododecane. Prior to 1977 see A08-F04.
1977

A08-F05 **Aluminium hydroxide**
1994
Previous code(s): A08-F

A08-F **Other flame retardants**
Including smoke inhibitors.

A08-M **MISCELLANEOUS AGENTS OR ADDITIVES**

A08-M01 **Adhesion improvers, subbing agents, bonding aids**
i.e. agents to improve the adhesiveness between polymer and substrate.

A08-M01A **. Dyeing and printing aids, dye receptiveness improving agents, dye levellers, dye/pigment dispersants**
Including polymeric. Prior to 1970 see A08-M01.
1970

A08-M01B **. Polymeric adhesion improvers**
Prior to 1977 see A08-M01.
1977

A08-M01C **. Acids, metal compounds adhesion improvers**
e.g. organo-aluminium or titanium compounds. Prior to 1977 see A08-M01.
1977

A08-M01D **. Silicon containing compounds adhesion improvers**
e.g. alkoxy silanes, vinyl silanes. Prior to 1977 see A08-M01.
1977

A08-M02 **Antiseptic, fungicidal, animal repellents**
e.g. tin compounds, copper compounds.

A08-M03 **Lubricants**
e.g. silicones, metal stearates.

A08-M03A **. Lubricants and oiling agents for fibres and textiles**
Prior to 1986 see A08-M03.
1986

A08-M03B **. Mould release agents; internal lubricants**
Prior to 1986 see A08-M03.
1986

A08-M04 **Odorants, deodorants**

A08-M05 **Tackifiers**

A08-M06 **Viscosity modifiers**
Excluding A08-A; including thixotropic agents, thickener.

A08-M07 **Antiblocking agents, dusting agents, slip agents**
i.e. materials applied to polymer surfaces to reduce their adhesiveness e.g. talc. Prior to 1970 see A08-M.
1970

A08-M08 **Prodegradants, peptising agents**
Prior to 1977 see A08-M.
1977

A08-M09 **Agents affecting mechanical, electrical, optical, magnetic and thermal properties**
Applied from the start of 1977 to the end of 1985 and was then discontinued. Prior to 1977 see A08-M.
1977-1985

A08-M09A **. Electrical, magnetic**
Prior to 1986 see A08-M09.
1986

A08-M09A1 **.. Carbon electroconductivity agent**
e.g. carbon nanotubes, fullerenes, graphene. Excl: (In)organic carbon compounds. Prior to 2011 see A08-M09A.
2011

A08-M09B **. Mechanical**
Prior to 1986 see A08-M09.
1986

A08-M09C **. Optical; thermal**
Prior to 1986 see A08-M09.
1986

A08-M09C1 **.. Carbon thermal conductivity agent**
e.g. carbon nanotubes, fullerenes, graphene. Excl: (In)organic carbon compounds. Prior to 2011 see A08-M09C.
2011

A08-M10 **Other specifically functional agents**
Including nucleating agents, corrosion stabilizer. Prior to 1977 see A08-M.
1977

A08-M10A **. Compatibility improver**
2017

A08-M **Other miscellaneous agents or additives**
Includes additives of unspecified function.

A08-P **PLASTICISERS AND EXTENDERS**

A08-P01 **General**

A08-P02 **Phthalates**

A08-P03 **Other aromatic acid esters**
Excluding A08-P02; e.g. trimellitates.

A08-P04 **(Cyclo)Aliphatic carboxylic acid esters**
e.g. adipates, sebacates. Including cyclohexyl carboxylic acid esters.

A08-P05 **Inorganic acid esters**
e.g. phosphates.

A08-P06 **Hydroxy acid esters**
e.g. citrates.

A08-P07 **Epoxy compounds**
e.g. epoxidised soybean oil.

A08-P08 **Coal tar fractions, oils, waxes, hydrocarbons**
Excluding A08-P02 to A08-P07.

A08-P **Other plasticisers and extenders**
e.g. glycerine, thioethers.

A08-R **FILLERS AND REINFORCING AGENTS**

A08-R01 **General**

A08-R02 **Asbestos**

A08-R03 **Carbon**
Including carbon black, graphite (non-fibrous).

A08-R03A . **Fibrous**
Prior to 1986 see A08-R03.
1986

A08-R04 **Glass**
Any form, including fibres, flake, powder, microspheres. See also A12-S08B.

A08-R05 **Metal**
Including boron, phosphorus, silicon; excluding compounds of metals.

A08-R06 **Silica and silicates**
Applied from the start of Plasdoc to the end of 1985 and was then discontinued.
1966-1985

A08-R06A . **Silica**
Including SiO2, sand, quartz, white carbon, aerosil, silicic acid, diatomite. Prior to 1986 see A08-R06.
1986

A08-R06B . **Silicates**
Including talc, mica, kaolin, clay, zeolite, wollastonite. Prior to 1986 see A08-R06.
1986

A08-R07 **Cellulosic**
Including wood powder/sawdust, shavings. Not to be searched for chipboard, hardboard or fibreboard, for which see A12-A04+.

A08-R08 **Polymeric**

A08-R08A . **Fibrous polymeric fillers**
1994
Previous code(s): A08-R08

A08-R08B . **Particulate polymeric fillers**
1994
Previous code(s): A08-R08

A08-R09 **Whiskers**
e.g. potassium titanate. Prior to 1986 see A08-R.
1986

A08-R **Other fillers and reinforcing agents**
Including metal compounds e.g. CaCO3, BaSO4.

A08-S **SURFACE ACTIVE AGENTS**
Excluding adhesion improvers, tackifiers, lubricants, antiblocking agents, for which see A08-M:.

A08-S01 **General**

A08-S02 **Solvents; swelling agents**

A08-S03 **Anti-foaming agents**

A08-S04 **Anti-static agents**

A08-S05 **Emulsifiers; wetting agents**

A08-S06 **Protective colloids**

A08-S07 **Foam stabilisers; cell control agents**
Prior to 1977 see A08-S.
1977

A08-S08 **Absorption agents; repellance agents**
Including scale inhibitors, antifog agents. For use of polymeric repellant finishes on fibres see A12-G03 only. Prior to 1977 see A08-S.
1977

A08-S09 **Anti-settling agents**
e.g. fumed silica.
2018

A08-S **Other surface active agents**
Including coagulants.

A09 PROPERTIES, ANALYSIS, TESTING, CONTROL

A09-A **PROPERTIES**
Coded only where the particular property is of exceptional importance. Properties resulting from a functional additive are not coded. However, properties related to polymer structure are coded.

A09-A01 **Non-flammability**

A09-A01A . **Thermal properties**
Including heat stability. Prior to 1970 see A09-A01.
1970

A09-A02 **Optical properties**
Including transparency and refractive index.

A09-A02A . **Liquid crystal, nematic properties**
e.g. optically anisotropic melt. Prior to 1986 no specific code was available.
1986

A09-A03 **Electrical**
e.g. (non)-conductivity. Including for (doped) polyacetylenes.

A09-A03A . **Electroluminescent property**
2002

A09-A04 **Magnetic properties**

A09-A05 **Mechanical**

A09-A05A . **Impact strength, toughness**
Prior to 1986 see A09-A05.
1986

A09-A05B . **Shape-memory property**
Includes self-healing, self-repairing. Prior to 2005 see A09-A05.
2005

A09-A06 **Dyeability, printability**
Prior to 1977 see A09-A.
1977

A09-A07 **Biodegradability**
1994
Previous code(s): A09-A

A09-A08 **Absorption/adsorption properties**
1994
Previous code(s): A09-A

A09-A09 **Permeability properties**
Includes semipermeability and gas barrier properties.
1994
Previous code(s): A09-A

A09-A **Other properties**
e.g. fungicidal.

A09-B **ANALYSIS**

A09-B **Analysis**
i.e. of chemical constitution.

A09-C **TESTING**

A09-C **Testing**
i.e. of physical properties.

A09-D **EQUIPMENT CONTROL, SAFETY DEVICES**

A09-D **Equipment control, safety devices**
Applied from the start of Plasdoc to the end of 1985 and was then discontinued.
1966-1985

A09-D01 **Moulding processes**
i.e. involving moulds e.g. injection. Prior to 1986 see A09-D.
1986

A09-D02 **Involving extruders**
Prior to 1986 see A09-D.
1986

A09-D03 **Other equipment control, safety devices**
Prior to 1986 see A09-D.
1986

A10 POLYMERISATION, POLYMER MODIFICATION

Addition (co)polymerisation of alkylene oxides, lactones, lactams, alkylene-imines is coded under A10-D: section only. For microsuspension polymerisation see A10-B03 and A10-B05. For inverse phase polymerisation see A10-B02, A10-B05 and A10-B. For descaling of plant see A10-G02. For descaling additive see also A08-S08. Treatment of effluent following polymerisation is coded under A10-G.

A10-A **NATURAL POLYMER PRODUCTION**

A10-A **Natural polymer production**
Excluding modification of natural polymers; including petroleum resin production, extraction of natural polymers e.g. tapping of rubber trees.

A10-B **ADDITION (CO)POLYMERISATION**
Excluding A10-C:.

A10-B01 **General**
Including equipment.

A10-B02 **Bulk**

A10-B03 **Emulsion**

A10-B04 **Solution**

A10-B05 **Suspension**

A10-B06 **Irradiation**

A10-B07 **Interfacial**

A10-B08 **Oligomerisation; telomerisation**
Including dimerisation. Prior to 1970 see A10-B.
1970

A10-B **Other addition (co)polymerisation**
e.g. gaseous phase, high pressure.

A10-C **ORDERED COPOLYMERISATION BY ADDITION**

A10-C01 **General**

A10-C02 **Block copolymerisation**

A10-C03 **Graft copolymerisation**

A10-C03A **. Grafting onto formed polymeric substrates**
Including fibres and articles. Prior to 1970 see A10-C03.
1970

A10-C03B **. By emulsion or suspension processes**
Prior to 1977 see A10-C03 and A10-C03A.
1977

A10-C03C **. By solution, bulk or irradiation initiated processes**
Prior to 1977 see A10-C03 and A10-C03A.
1977

A10-D **CONDENSATION POLYMERISATION**

A10-D01 **Interfacial**

A10-D02 **Ordered cocondensation**

A10-D03 **Ring opening or closure**
Prior to 1970 see A10-D.
1970

A10-D04 **Equipment**
Prior to 1970 see A10-D01, A10-D02 and A10-D appropriately.
1970

A10-D05 **Polyesterification**
Includes carbonate bond formation.
1994
Previous code(s): A10-D+

A10-D06 **Electrolytic/oxidative polymerisation**
1994
Previous code(s): A10-D

A10-D07 **General condensation polymerization**
2023

A10-D **Other condensation polymerisation**

A10-E **CHEMICAL MODIFICATION**
Including modified polymers. Modified polymers are always searched in A10-E:. Whenever the modification process is described, the unmodified polymer is additionally searchable. For imidation search both A10-E14 and A10-E17. Maleinised resins are coded A10-E23, e.g. maleinised rosin, polyisobutenyl maleic anhydride etc. Devulcanised polymer is coded A10-E. Vinyl silane modified polymer is coded A10-E03 and A10-E22A. If graft copolymerisation onto the polymer is involved, then A4-A and A10-C03+ also coded.

A10-E01 **General**

A10-E02 **Acetalisation**
Used for polyvinyl acetal, butyral, formal and polyvinyl ketals.

A10-E03 **Alkylation; arylation**
i.e. formation of C-C bond. e.g. haloalkylation, aminoarylation.

A10-E04 **Dehalogenation; (de)hydrohalogenation**

A10-E04A **. Halogenation**
Prior to 1986 see A10-E04.
1986

A10-E05 **Depolymerisation; degradation**

A10-E05A **. Pyrolysis of waste polymeric material**
Prior to 1977 see A10-E05.
1977

A10-E05B **. Carbonisation**
Excluding A10-E05A. Prior to 1977 see A10-E05.
1977

A10-E05C **. Depolymerisation to monomers or oligomers**
Prior to 1977 see A10-E05.
1977

A10-E06 **Epoxidation**
e.g. epoxidised polybutadiene. For epoxidised novolac see A10-E08C.

A10-E07 **Esterification**

A10-E07A **. By unsaturated polybasic acid (or derivatives)**
e.g. maleic acid. Prior to 1977 see A10-E07.
1977

A10-E07B **. By unsaturated monobasic acid (or derivatives)**
Including acrylated epoxy resins. Prior to 1977 see A10-E07.
1977

A10-E07C **. By saturated acid (or derivatives)**
Prior to 1977 see A10-E07.
1977

A10-E08 **Etherification**

A10-E08A **. (Cyclo)aliphatic ether of polyether containing oxyethylene and/or oxypropylene units only**
Prior to 1977 see A10-E08.
1977

A10-E08B **. Other ethers of polyoxyalkylene glycols**
Prior to 1977 see A10-E08.
1977

A10-E08C **. Other etherified polymers**
Including 'alkylated' melamine, e.g. (methoxy) methylolated melamine; epoxidised phenoplasts. Prior to 1977 see A10-E08.
1977

A10-E09 **Hydrolysis, saponification, alcoholysis, glycolysis**
For (partially) hydrolysed polyvinyl acetate or ethylene vinyl acetate copolymer see A10-E09A or A10-E09B+ appropriately. Including reactions of chitosan.

A10-E09A **. Polyvinyl alcohol compositions**
Prior to 1970 see A10-E09.
1970

A10-E09B **. Polyvinyl alcohol uses**
Prior to 1970 see A10-E09.
1970

A10-E09B1 **.. Adhesives and binders; coatings**
Prior to 1986 see A10-E09B.
1986

A10-E09B2 **.. Optical, (electro) photographic, laboratory; medical, dental, cosmetic and veterinary**
Prior to 1986 see A10-E09B.
1986

A10-E10 **Electric discharge, ultrasonic treatment and irradiation**
Including by UV and by ionising rays; excluding for crosslinking, for which see A11-C02B.

A10-E11 **Oxidation; ozonisation**
Including dehydrogenated polymers.

A10-E12 **Sulfonation or sulfohalogenation**
Applied from the start of Plasdoc to the end of 1985 and was then discontinued.
1966-1985

A10-E12A **. Sulfonation**
Prior to 1986 see A10-E12.
1986

A10-E12B **. Halosulfonation**
Prior to 1986 see A10-E12.
1986

A10-E13 **Hydrogenation**
Including reduction by other means.

A10-E14 **Cyclisation**

A10-E15 **Amidation, amination**
Applied from the start of CPI (1970) to the end of 1976 and was then discontinued. Prior to 1970 see A10-E.
1970-1976

A10-E16 **Incorporation of metal atoms**
Including boron, phosphorus and silicon. Applied from the start of CPI (1970) to the end of 1976 and was then discontinued. Prior to 1970 see A10-E.
1970-1976

A10-E17 **Amidation**
Prior to 1977 see A10-E15.
1977

A10-E17A **. Amidation of epoxy resins or polyethers**
2002

A10-E17B **. Amidation of other polymers**
2002

A10-E18 **Amination of epoxy resins or polyethers**
Prior to 1977 see A10-E15.
1977

A10-E19 **Amination of other polymers**
Prior to 1977 see A10-E15.
1977

A10-E20 **Incorporation of phosphorus**
Prior to 1977 see A10-E16.
1977

A10-E21 **Incorporation of alkali(ne earth) metal**
Including NH4+. Prior to 1977 see A10-E16.
1977

A10-E21A **. Natural polymers**
Prior to 1986 see A10-E21.
1986

A10-E21B **. Mono- or di-carboxylic unsaturated acid (co)polymers**
Prior to 1986 see A10-E21.
1986

A10-E22 **Incorporation of other metal(loid)s**
i.e. excluding A10-E20 and A10-E21+; including boron. Prior to 1977 see A10-E16.
1977

A10-E22A **. Incorporation of silicon**
Prior to 1986 see A10-E22.
1986

A10-E23 **Forming hydroxy or carboxy groups other than by hydrolysis**
Prior to 1977 see A10-E.
1977

A10-E24 **Nitration; urethanisation; sulfation; sulfurisation; xanthation; thio group formation**
Including acrylated polyurethanes prepared from e.g. isocyanate terminated prepolymers and hydroxyalkyl acrylates. Prior to 1977 see A10-E.
1977

A10-E **Other chemical modification**

A10-G **OTHER MISCELLANEOUS PROCESSES**

A10-G01 **Purification and concentration of polymer**
Applied from the start of Plasdoc to the end of 1985 and was then discontinued.
1966-1985

A10-G01A **. Monomer, solvent, catalyst recovery/removal from polymer, including catalyst destruction; devolatalisation**
Prior to 1986 see A10-G01.
1986

A10-G01B **. Other purification and concentration of polymer**
Prior to 1986 see A10-G01.
1986

A10-G02 **Prevention/removal of scale on polymerisation vessels**
Including use of additives, coatings etc. Prior to 1986 see A10-G.
1986

A10-G **Other miscellaneous processes**
Including cleaning of polymerisation vessels.

A11 PROCESSING POLYMERS INCLUDING EQUIPMENT

A11-A PRELIMINARY PROCESSES

A11-A01 Colouring, bleaching

A11-A01A . With specific compositions
Prior to 1970 see A11-A01.
1970

A11-A01B . Processes
Prior to 1970 see A11-A01.
1970

A11-A02 Heating
Including pre-heating and drying; excluding annealing etc. for which see A11-B02+ and crosslinking for which see A11-C02+.

A11-A02A . Heating film/sheet, divided forms
e.g. powders, fibre or fabric. Prior to 1977 see A11-A02.
1977

A11-A02B . Heating other forms
Excluding A11-A02A; e.g. moulded articles, tubes, parisons. Prior to 1977 see A11-A02.
1977

A11-A02C . Cooling
Excluding A11-B07D. Prior to 1977 see A11-A02.
1977

A11-A03 Mixing, compounding, homogenising, blending

A11-A03A . Equipment
Prior to 1970 see A11-A03.
1970

A11-A04 Divided forms of polymer production
e.g. by granulation, grinding to powders, pelleting.

A11-A05 Cutting, sawing and other machining
Excluding A11-A04.

A11-A05A . Perforating, punching, slitting, drilling holes; cutting tubes and tyres
Prior to 1977 see A11-A05.
1977

A11-A05B . Deflashing and burr removal; cutting recesses, grooves, threads, etc., in surfaces
Prior to 1977 see A11-A05.
1977

A11-A05C . Cutting films and fabrics
e.g. during bag making. Prior to 1977 see A11-A05.
1977

A11-A06 Sieving, sorting, filtering, classifying
Classifying, sieving, filtering of raw materials.
2022

A11-A Other preliminary processes
Including methods of feeding raw materials, degassing, purging, vacuum hoppers.

A11-B FORMING PROCESSES

A11-B01 General

A11-B02 Annealing, crystallising, heat-setting, orienting, drawing, fibrillating

A11-B02A . Orienting/stretching film
Prior to 1970 see A11-B02.
1970

A11-B02B . Orienting/stretching fibres
Inc:fabric. Prior to 1970 see A11-B02.
1970

A11-B02C . Heat-setting films/fibres
Prior to 1970 see A11-B02.
1970

A11-B02D . Crimping, bulking
Prior to 1977 see A11-B02C.
1977

A11-B02E . Shrinking
Prior to 1977 see A11-B02C.
1977

A11-B03 Calendering

A11-B04 Casting; slush-, dip-, and rotary moulding, general
Including with monomer or condensant and polymerising.

A11-B04A . By rotational moulding, centrifugal casting
Prior to 1977 see A11-B04.
1977

A11-B04B . By other specific moulding methods
e.g. dip moulding, shell moulding; excluding A11-B04C. Prior to 1977 see A11-B04.
1977

A11-B04C . Forming films, sheets, lace
Prior to 1977 see A11-B04.
1977

A11-B05 Coating
Including spreading, encapsulation.

A11-B05A . **Electrodeposition, dipping**
Search with A11-B05D if coating is dispersion, solution or paste. Including fluidised bed. Prior to 1970 see A11-B05.
1970

A11-B05B . **Coating by spraying, flocking, extrusion, general**
Search with A11-B05D if coating is dispersion, solution or paste. Prior to 1970 see A11-B05.
1970

A11-B05B1 .. **By spraying**
Prior to 1986 see A11-B05B.
1986

A11-B05B2 .. **By extrusion**
Prior to 1986 see A11-B05B.
1986

A11-B05B3 .. **Spin coating**
2016

A11-B05C . **With monomer or condensant and polymerising**
Excluding A11-B04+; i.e. leaving a finished coating. Prior to 1977 see A11-B05, A11-B05A and A11-B05B appropriately.
1977

A11-B05D . **With dispersion, solution or paste**
Prior to 1977 see A11-B05, A11-B05A and A11-B05B appropriately.
1977

A11-B05E . **With powder, melt or foam**
Prior to 1977 see A11-B05, A11-B05A and A11-B05B appropriately.
1977

A11-B05F . **Encapsulation process**
Encapsulating.
2016

A11-B06 **Expanding, foaming, pore-forming**

A11-B06A . **To form specific goods**
Prior to 1970 see A11-B06.
1970

A11-B06B . **Involving extrusion**
Excluding A11-B06A. Prior to 1977 see A11-B06 and A11-B06A appropriately.
1977

A11-B06C . **Involving molding**
Excluding A11-B06A. Prior to 1977 see A11-B06 and A11-B06A appropriately.
1977

A11-B06D . **Involving other specific methods**
e.g. by dissolution, sintering; excluding A11-B06A. Prior to 1977 see A11-B06 and A11-B06A appropriately.
1977

A11-B07 **Extrusion and coextrusion**
Excluding coating by extrusion for which see A11-B05B2, extrusion spinning for which see A11-B15+ and extrusion foaming for which see A11-B06B.

A11-B07A . **Of film and sheet**
Including inflation forming tubular film. Prior to 1970 see A11-B07.
1970

A11-B07B . **Of tube and other profiles**
Excluding A11-B07A. Prior to 1970 see A11-B07.
1970

A11-B07C . **Other extrusion**
Prior to 1977 see A11-B07, A11-B07A and A11-B07B appropriately.
1977

A11-B07D . **Associated processes**
e.g. cooling, haul-off. Prior to 1977 see A11-B07, A11-B07A and A11-B07B appropriately.
1977

A11-B08 **Forming**
Including corrugating, winding strips to form tube.

A11-B08A . **Vacuum assisted forming of sheet or film**
Prior to 1977 see A11-B08.
1977

A11-B08B . **Forming of sheet or film**
Excluding A11-B08A. Prior to 1977 see A11-B08.
1977

A11-B08C . **Forming from tube or pipe**
Including fittings. Prior to 1977 see A11-B08.
1977

A11-B09 **Laminating; lay-up of reinforced plastics**
See also A12-S08+.

A11-B09A . **To form specific goods**
Prior to 1970 see A11-B09.
1970

A11-B09A1 .. **Involving fibrous/filament reinforcement**
Prior to 1986 see A11-B09A.
1986

A11-B09A2 .. **Involving non-fibrous material**
Excluding coextrusion laminating of film, for which see A11-B07A. Prior to 1986 see A11-B09A.
1986

A11-B09B . **Decorative laminate production; chip-, fibre-, cardboard and plywood**
Prior to 1977 see A11-B09.
1977

A11-B09C . **Fibre reinforced plastics (FRP) production, filament winding, pultrusion**
Excluding A11-B09A+. Prior to 1977 see A11-B09.
1977

A11-B09D . **Laminating non-fibrous bodies**
Excluding A11-B09A+; excluding coextrusion laminating of film, for which see A11-B07A. Prior to 1977 see A11-B09.
1977

A11-B09E . **Other laminating processes**
Excluding A11-B09A+. Prior to 1977 see A11-B09.
1977

A11-B10 **Blow molding**
Excluding A11-B07A.

A11-B11 **Compression and transfer moulding**

A11-B12 **Injection molding**

A11-B12A . **To form specific goods**
Prior to 1970 see A11-B12.
1970

A11-B12B . **Molds**
Prior to 1977 see A11-B12 and A11-B12A appropriately.
1977

A11-B12C . **Equipment**
Excluding A11-B12A and A11-B12B. Prior to 1977 see A11-B12 and A11-B12A appropriately.
1977

A11-B13 **Pressing (between flat platens)**

A11-B14 **Sintering**
Excluding A11-B06D.

A11-B15 **Spinning**
Including associated processes, e.g. take-off.

A11-B15A . **Heads, die design, spinnerettes**
Prior to 1970 see A11-B15.
1970

A11-B15B . **Melt**
Prior to 1970 see A11-B15.
1970

A11-B15B1 .. **High speed melt spinning**
1994
Previous code(s): A11-B15B

A11-B15C . **Solution**
i.e. wet or dry. Prior to 1970 see A11-B15.
1970

A11-B16 **Stereographic moulding**
Used for processes that produce a three-dimensional polymer form by sequential polymerising or curing, usually by computer control, onto a previously polymerised or cured surface, thus "building up" a three-dimensional moulding. Also used for 3D/4D-printing, additive manufacturing, rapid prototyping e.g. FDM, LOM, SFF. See also A10-B+, A10-C+, A10-D+, A11-C02B and/or A11-C02D if appropriate.
1994
Previous code(s): A11-B

A11-B17 **Tyre manufacture**
All processes. See also A11-C02A1 and A12-T01A.
1994
Previous code(s): A11-B

A11-B **Other forming processes**
Including insert incorporation.

A11-C **OTHER MISCELLANEOUS PROCESSES**
i.e. on (semi-)finished polymers.

A11-C01 **Bonding, glueing, welding, heat-sealing, riveting**

A11-C01A . **Heat sealing, welding to make specific goods**
e.g. ultrasonic, microwave. Prior to 1970 see A11-C01.
1970

A11-C01A1 .. **Involving film, sheet; packaging**
Prior to 1986 see A11-C01A.
1986

A11-C01B . **Heat sealing, welding, general**
e.g. ultrasonic, microwave. Prior to 1970 see A11-C01.
1970

A11-C01C . **Other bonding to make specific goods**
Prior to 1970 see A11-C01.
1970

A11-C01D . **Other bonding, general**
Prior to 1970 see A11-C01.
1970

A11-C02 **Crosslinking, curing, vulcanisation**

A11-C02A **. Rubber vulcanisation**
Prior to 1970 see A11-C02.
1970

A11-C02A1 **.. Tyre vulcanisation**
Prior to 1986 see A11-C02A.
1986

A11-C02B **. Crosslinking with irradiation**
Excluding A11-C02A and A11-C02A1. Prior to 1977 see A11-C02.
1977

A11-C02C **. Crosslinking involving coating and/or extrusion**
Excluding A11-C02A and A11-C02A1. Prior to 1977 see A11-C02.
1977

A11-C02D **. Crosslinking involving moulding and/or foaming**
Excluding A11-C02A and A11-C02A1. Prior to 1977 see A11-C02.
1977

A11-C03 **Scrap recovery**
Including retreading of tyres; reclaiming and recycling as well as use of reclaimed/recycled polymer.

A11-C03A **. Involving shredding, cutting, pulverising, granulating**
Prior to 1986 see A11-C03.
1986

A11-C04 **Surface treatment**
Including flame treatment.

A11-C04A **. Painting, printing**
Prior to 1970 see A11-C04.
1970

A11-C04B **. Metallising; coating with other materials, general**
Prior to 1970 see A11-C04.
1970

A11-C04B1 **.. Metallising**
Prior to 1986 see A11-C04B.
1986

A11-C04B2 **.. Coating with other materials**
Excluding A11-C04B1. Prior to 1986 see A11-C04B.
1986

A11-C04C **. Embossing**
Prior to 1977 see A11-C04.
1977

A11-C04D **. Chemical treatment**
Including etching. Prior to 1977 see A11-C04.
1977

A11-C04E **. Corona discharge, plasma treatment; irradiation**
Prior to 1986 see A11-C04.
1986

A11-C05 **Textile processes**
Excluding specific processes in A11-A:, A11-B: and A11-C:. Prior to 1970 no specific code was available. References may be found under A11-A, A11-B and A11-C:.
1970

A11-C05A **. Producing fabrics**
Prior to 1977 see A11-C05.
1977

A11-C05A1 **.. Melt blowing**
1994
Previous code(s): A11-C05A

A11-C05B **. Twisting, winding of fibres and yarns**
Prior to 1977 see A11-C05.
1977

A11-C05C **. Other processing of fibres and yarns**
Inc: mercerizing, reeling. Prior to 1977 see A11-C05.
1977

A11-C05C1 **.. Flash spinning**
1994
Previous code(s): A11-C05

A11-C06 **Ejection of mouldings; conveying, winding and storage of plastics articles**
Prior to 1977 see A11-C.
1977

A11-C07 **Waste treatment; pollution control**
Prior to 1977 see A11-C.
1977

A11-C **Other miscellaneous processes**
Including repair of articles (excluding retreading of tyres), sterilisation, wire insulation removal, cleaning of polymer handling/forming/ processing plant; excluding cleaning of polymerisation vessels for which see A10-G.

A12 POLYMER APPLICATIONS

Where the polymer use as an adhesive and/or coating applies to a specific use in any other section (A12-C: through A12-W:), then the appropriate code from that section only is applied e.g. for bottle coatings see A12-P06A only.

A12-A **ADHESIVES AND BINDERS**
Excluding sealants for which see A12-R08. For binders, when a specific use of the binder is given only that use is searchable.

A12-A **General adhesive applications**
i.e. unspecified compositions for general adhesive applications.

A12-A01 **Adhesive tape**
Excluding electrical insulation tape for which see A12-E03; including surgical tape.

A12-A01A **. Adhesive on a carrier (excluding tape)**
1994

A12-A02 **Binders for core moulds, earth consolidation**

A12-A03 **Abrasive paper, grinding wheels**
Including all abrasive compositions.

A12-A04 **Board, general**
Prior to 1970 see A12-A.
1970

A12-A04A **. Decorative laminate; decorative board**
Prior to 1977 see A12-A04.
1977

A12-A04B **. Chip-, particle- or fibre-board**
Prior to 1977 see A12-A04.
1977

A12-A04C **. Other cellulosic products**
Including plywood. Prior to 1977 see A12-A04.
1977

A12-A04D **. Laminates, otherwise unspecified**
2002

A12-A05 **Adhesive and binder compsns.**
Excluding A12-A02, A12-A03 and A12-A04+; this is only for general adhesive and binder applications. When a specific use is given, only that use is searchable. Prior to 1970 see A12-A.
1970

A12-A05A **. Natural polymer, natural rubber or diene rubber based**
Prior to 1970 see A12-A.
1970

A12-A05B **. Addition polymer based**
Excluding diene rubber. Prior to 1970 see A12-A.
1970

A12-A05B1 **.. Acrylic**
Prior to 1986 see A12-A05B.
1986

A12-A05B2 **.. Polyolefins**
Monoolefinic hydrocarbon; including ethylene-vinyl acetate copolymer. Prior to 1986 see A12-A05B.
1986

A12-A05B3 **.. Vinyl halide and/or vinyl carboxylate (co)polymers**
Excluding ethylene-vinyl acetate copolymer for which see A12-A05B2. Prior to 1986 see A12-A05B.
1986

A12-A05C **. Epoxy resin based**
Prior to 1970 see A12-A.
1970

A12-A05D **. Aminoplast or phenoplast based**
Prior to 1977 see A12-A05.
1977

A12-A05E **. Polyester based**
Prior to 1977 see A12-A05.
1977

A12-A05F **. Polyurethane or polyurea based; other resins from isocyanates**
Prior to 1977 see A12-A05.
1977

A12-B **COATINGS AND PAINTS**
Excluding textile finishes for which see A12-G+; including polishes. The codes A12-B01+ are applied when the substrate is specified. The codes A12-B01, A12-B01A and A12-B01B are applied when neither the polymer nor the substrate is specified. Search only the substrate on which the coating is directly applied.

A12-B01 **General**

A12-B01A **. Emulsion paints, latex paints, water based lacquers, general**
Prior to 1970 see A12-B01.
1970

A12-B01B **. Varnishes, solvent-based lacquers, general**
Prior to 1970 see A12-B01.
1970

A12-B01C . **Inorganic polymers, including silicon polymers; diene or polyene polymers**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01D . **Natural polymers**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01E . **Acrylic polymers**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01F . **Vinyl carboxylate or halogen containing addition polymers**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01G . **Other addition polymers**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01H . **Polyesters**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01J . **Phenoplasts or aminoplasts**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01K . **Polyurethanes**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01L . **Epoxy resins**
Prior to 1977 see A12-B01, A12-B01A and A12-B01B appropriately.
1977

A12-B01V . **Other condensation polymers**
Prior to 2006 see A12-B01X.
2006

A12-B01W . **General addition polymer coating**
Indexed for the generic case or when three or more codes are required from the A12-B01+ hierarchy.
1994
Previous code(s): A12-B01+

A12-B01X . **General condensation polymer coating**
Indexed for the generic case and where three or more codes are required from the A12-B01+ hierarchy.
1994
Previous code(s): A12-B01+

A12-B02 **Fibres, cloth and felts**
Excluding finishes for which see A12-G: section or A12-S05S.

A12-B02A . **Leathercloth, synthetic leather**
Prior to 1970 see A12-B02.
1970

A12-B02B . **Polymer-bonded non-woven fabrics**
Prior to 1970 see A12-B02.
1970

A12-B03 **Paper, cardboard**
Excluding for use in paper making for which see A12-W06+.

A12-B03A . **Compositions**
Prior to 1970 see A12-B03.
1970

A12-B04 **On metal**
Excluding on electric wire, for which see A12-E02+.

A12-B04A . **Compositions**
Applied from the start of CPI (1970) to the end of 1976 and was then discontinued. Prior to 1970 see A12-B04.
1970-1976

A12-B04B . **Produced by specific techniques**
Including non-resinous pretreatment. Prior to 1977 see A12-B04A.
1977

A12-B04C . **Using natural, inorganic or condensation resins**
Prior to 1977 see A12-B04A.
1977

A12-B04D . **Using acrylic resins**
Prior to 1977 see A12-B04A.
1977

A12-B04E . **Using vinyl carboxylate or halogen containing addition polymers**
Prior to 1977 see A12-B04A.
1977

A12-B04F . **Using other addition polymers**
Prior to 1977 see A12-B04A.
1977

A12-B05 **On glass; glass fibre**
Excluding glass fibre reinforced for which see A12-S08+; Including on glass optical fibre (with A12-L03A). Prior to 1970 see A12-B.
1970

A12-B06 **On natural leather**
Prior to 1970 see A12-B.
1970

A12-B07 **On polymers**
Excluding on fibres for which see A12-B02+ or A12-G+. Prior to 1970 see A12-B.
1970

A12-B07A . **On films**
Optionally laminated. Prior to 1977 see A12-B07.
1977

A12-B07B . **On foams**
Prior to 1977 see A12-B07.
1977

A12-B07C . **On tubes, cables or other profiles**
Prior to 1977 see A12-B07.
1977

A12-B08 **On other inorganic material**
e.g. concrete, ceramics, stone. Prior to 1977 see A12-B.
1977

A12-B09 **On wood or other plant derived material**
Including seeds, coal dust. Prior to 1977 see A12-B.
1977

A12-B **Other specific coatings**
e.g. on foods, medical tablets.

A12-C **CLOTHING AND FOOTWEAR**

A12-C00C **Clothing general**
2002

A12-C01 **Foamback fabrics and garments**

A12-C02 **Safety clothing**
Excluding footwear; including sunglasses.

A12-C02A . **Gloves**
1994
Previous code(s): A12-C02

A12-C02B . **Helmets**
1994
Previous code(s): A12-C02

A12-C02C . **Protective masks**
Includes surgical/medical masks (with A12-V03C1).
2022

A12-C03 **Other clothing**
Including (slide)fasteners.

A12-C04 **Footwear**
Including laces; excluding socks, hosiery, for which see A12-C03.

A12-D **HOUSEHOLD AND OFFICE FITTINGS OR ACCESSORIES**

A12-D00D **General household/office application**
Indexed for the generic case and where three or more codes are required from the A12-D+ hierarchy.
1994

A12-D01 **Furniture and soft furnishings**
Including mattresses, bedding, draperies.

A12-D02 **Carpets and (foam) underlays**

A12-D03 **Kitchenware**
Including brushes, boil-in-bag food packs, cooking utensils.

A12-D04 **Other domestic**
e.g. refrigerators.

A12-D05 **Office**

A12-D05A . **Pressure sensitive materials**
e.g. carbon(-less) paper, typewriter ribbon. Prior to 1986 see A12-D05.
1986

A12-D05B . **Writing devices and inks**
Prior to 1986 see A12-D05.
1986

A12-D **Other household and office fittings or accessories**
e.g. credit cards.

A12-E **ELECTRICAL ENGINEERING**

A12-E01 **General**
Including general insulating compositions.

A12-E01A . **Electromagnetic screening**
1994
Previous code(s): A12-E+

A12-E02 **Cable and wire insulation or coating**

A12-E02A . **Compositions**
Prior to 1970 see A12-E02.
1970

A12-E02B . **Fabrication, treatment**
Prior to 1986 see A12-E02.
1986

A12-E03 **Insulation tape**

A12-E04 **Potting compounds, encapsulating compositions and like insulation**

A12-E05 **Insulating cases and bodies (moulded or cast)**

A12-E06 **Batteries, accumulators, fuel cells**
Prior to 1970 see A12-E and A12-E05 appropriately.
1970

A12-E06A **. Electrodes**
Prior to 1986 see A12-E06.
1986

A12-E06B **. Separators, membranes**
Prior to 1986 see A12-E06.
1986

A12-E06C **. Casings, seals, sealants**
Prior to 1986 see A12-E06.
1986

A12-E07 **Circuit components**
Prior to 1970 see A12-E.
1970

A12-E07A **. Printed circuits**
Prior to 1977 see A12-E07.
1977

A12-E07B **. Capacitors**
Prior to 1977 see A12-E07.
1977

A12-E07C **. Semiconductor devices, integrated circuits; resistors**
Prior to 1977 see A12-E07.
1977

A12-E07C1 **.. Associated processing auxiliaries**
e.g. developers (with A12-L+), polishing compositions (with A12-A3), tape automated bonding (TAB) compositions.
2011

A12-E08 **Magnetic**
e.g. magnets. Prior to 1970 see A12-E.
1970

A12-E08A **. Magnetic recording (compositions)**
Prior to 1986 see A12-E08.
1986

A12-E08A1 **.. Magnetic tape**
Including audio and video. Prior to 1986 see A12-E08.
1986

A12-E08A2 **.. Other magnetic recording**
Including heads, (floppy) discs, magneto-(optical). Prior to 1986 see A12-E08.
1986

A12-E08B **. Motors, coils, transformers, generators**
Prior to 1986 see A12-E08.
1986

A12-E09 **Electrolytic, electrochemical, or electrophoresis cells**
Including parts thereof e.g. electrodes. Prior to 1977 see A12-E.
1977

A12-E10 **Heat and temperature uses**
e.g. temperature measurement, heating materials, heat sensitive materials. Prior to 1977 see A12-E.
1977

A12-E11 **Electro-optical**
Excluding liquid crystal (devices) for which see A12-L03B; e.g. lamps. Prior to 1977 see A12-E.
1977

A12-E11A **. Electrochromic displays including cathode ray tubes; photodiodes (LED)**
Prior to 1986 see A12-E11.
1986

A12-E11B **. Photoelectric cells**
Including solar cells. Prior to 1986 see A12-E11.
1986

A12-E11C **. Electroluminescent devices**
2002

A12-E12 **Electroacoustic**
e.g. radios, loudspeakers, including transducers. Prior to 1977 see A12-E.
1977

A12-E13 **Instrumentation; measuring; testing**
Including probes, sensors, detectors. Prior to 1986 see A12-E.
1986

A12-E14 **Electrodes**
Excluding A12-E06A and A12-E09. Prior to 1986 see A12-E.
1986

A12-E15 **Piezoelectric compositions/devices**
Prior to 1986 see A12-E.
1986

A12-E16 **Superconductor application**
1994
Previous code(s): A12-E

A12-E **Other electrical uses**
Including aerials, electrical waveguides, electric bus bars.

A12-F **FANCY GOODS, GAMES, SPORTS EQUIPMENT, TOYS, EDUCATIONAL DEVICES (OTHERS)**
Includes fancy goods, toys, educational devices, training, teaching, models, globes.

A12-F01 **Sports and games equipment**
Including camping, board games, fishing lines. Prior to 1970 see A12-F.
1970

A12-F01A . **Sports areas**
Including courts, mats, pools. Prior to 1986 see A12-F01.
1986

A12-F01B . **Balls, racquets, clubs, bats**
Prior to 1986 see A12-F01.
1986

A12-F **Other fancy goods, games, sports equipment, toys, educational devices**
Including fancy goods, toys: Educational devices, training, teaching, models, globes.

A12-G **FIBRE AND TEXTILE POLYMERIC FINISHES**

A12-G00G **General or unspecified fibre and textile polymeric finishes**
2002

A12-G01 **Flame-retardant**
See also A12-S05R for non-resinous finishes.

A12-G02 **Shrink-, crease-resistant, non-iron**
See also A12-S05R for non-resinous finishes. Prior to 1970 see A12-G.
1970

A12-G03 **Water-, oil-, soil-proofing**
See also A12-S05R for non-resinous finishes. Prior to 1970 see A12-G.
1970

A12-G04 **Sizes**
See also A12-S05R for non-resinous finishes.
1994
Previous code(s): A12-G

A12-G **Other fibre and textile polymeric finishes**
Excluding A12-S05S. See also A12-S05T for non-resinous finishes.

A12-H **MECHANICAL ENGINEERING**

A12-H00H **General mechanical engineering**
Indexed for the generic case and where three or more codes are required from the A12-H+ hierarchy.
1994

A12-H01 **(Conveyor) belts**
Including systems.

A12-H02 **Hose, tubing, pipes**

A12-H02A . **Unreinforced**
Prior to 1970 see A12-H02.
1970

A12-H02B . **Reinforced**
See also A12-S08+. Prior to 1970 see A12-H02.
1970

A12-H02C . **Fittings**
e.g. flanges, connectors. Prior to 1977 see A12-H02, A12-H02A and A12-H02B appropriately.
1977

A12-H02D . **Coatings, linings**
Including polymer laminates and coextrudates. Prior to 1977 see A12-H02, A12-H02A, and A12-H02B appropriately.
1977

A12-H02D1 .. **Lagging, thermal insulation**
Prior to 1986 see A12-H02D
1986

A12-H03 **Gears, bearing surfaces and similar joints**

A12-H04 **Filters**
Excluding (semi)-permeable membranes (ultrafilters) for which see A12-W11A; includes cigarette filters.

A12-H05 **Moulds of rubber or plastics**
Excluding core moulds for which see A12-A02.

A12-H06 **Hinges**

A12-H07 **Valves, diaphragms**
Prior to 1970 see A12-H.
1970

A12-H08 **Seals**
Excluding A12-H07; sealants for which see A12-R08 and closures for which see A12-P03. Prior to 1970 see A12-H.
1970

A12-H09 **Shock absorbers**
Prior to 1977 see A12-H.
1977

A12-H10 **Brake material; materials for increasing or decreasing friction; abrasion reducers**
Excluding bearings for which see A12-H03. Prior to 1977 see A12-H.
1977

A12-H11 **Rolls, rollers**
Prior to 1986 see A12-H.
1986

A12-H12 **Fasteners**
Including screws, nuts, clamps, (anchor) bolts. Prior to 1986 see A12-H.
1986

A12-H **Other mechanical engineering**
e.g. tools, pumps, fan blades.

A12-L **(ELECTRO)PHOTOGRAPHY, LABORATORY, OPTICAL**
(Electro)photographic materials include those sensitive to (UV) light or ionising radiation.

A12-L00L **General optical**
2002

A12-L01 **Photographic (film) support; binders**

A12-L02 **Other photographic materials, processes**
Inc: holography.

A12-L02A **. Apparatus**
Including lenses; e.g. spectacle lenses (with 12-V02A), but excluding contact lenses for which see A12-V02A only. Prior to 1970 see A12-L02.
1970

A12-L02B **. Compositions for making printing plates or electrical devices**
Applied from the start of 1977 to the end of 1985 and was then discontinued. Prior to 1977 see A12-L02.
1977-1985

A12-L02B1 **.. Printing plates**
Prior to 1986 see A12-L02B.
1986

A12-L02B2 **.. Electrical devices**
e.g. printed circuits. Prior to 1986 see A12-L02B.
1986

A12-L02C **. Radiation sensitive compositions containing unsaturated monomers**
Excluding A12-L02B1 and A12-L02B2. Prior to 1977 see A12-L02.
1977

A12-L02D **. Radiation sensitive compositions containing unsaturated polymers**
Excluding A12-L02B1 and A12-L02B2. Prior to 1977 see A12-L02.
1977

A12-L02E **. Other radiation sensitive polymer compositions**
Excluding A12-L02B1 and A12-L02B2. Prior to 1977 see A12-L02.
1977

A12-L02F **. Compositions containing non-radiation sensitive polymer**
Excluding A12-L01; including mordants, acceptor layers, developers. Prior to 1986 see A12-L02.
1986

A12-L03 **Other optical uses**
i.e. non-photographic; excluding electro-optical for which see A12-E11+; e.g. spectacle frames, lamp shades.

A12-L03A **. Optical fibres, cables**
Including coatings, adhesives etc. Prior to 1986 see A12-L03.
1986

A12-L03B **. Liquid crystal (devices)**
Prior to 1986 see the combination of codes A12-L03 and A12-E11.
1986

A12-L03C **. Optically readable records**
Including laser recording devices, optical discs e.g. compact discs. Prior to 1986 see A12-L03.
1986

A12-L03D **. Optical filters**
1994
Previous code(s): A12-L03

A12-L04 **Laboratory**

A12-L04A **. Chromatography**
1994
Previous code(s): A12-L04

A12-L04B **. Sensors/measuring**
Excluding A12-E13.
1994
Previous code(s): A12-L04

A12-L05 **Electrophotography and thermography**
Prior to 1970 see A12-L01, A12-L02 and A12-L appropriately.
1970

A12-L05A **. Thermography**
Prior to 1977 see A12-L05.
1977

A12-L05B **. Photoconductive polymers**
Prior to 1977 see A12-L05.
1977

A12-L05C . **Electrophotographic toners and apparatus**
Applied from the start of 1977 to the end of 1985 and was then discontinued. Prior to 1977 see A12-L05.
1977-1985

A12-L05C1 .. **Equipment**
Prior to 1986 see A12-L05C.
1986

A12-L05C2 .. **Toners and carriers**
Prior to 1986 see A12-L05C.
1986

A12-L05D . **Binders and substrates**
Prior to 1977 see A12-L05.
1977

A12-L **Other (electro)photography, laboratory, optical**

A12-M **ION EXCHANGE RESINS, POLYELECTROLYTES**

A12-M **General ion exchange resins**

A12-M01 **Acrylic polyelectrolytes, flocculants**
Prior to 1977 see A12-M
1977

A12-M02 **Other polyelectrolytes, flocculants**
Prior to 1977 see A12-M.
1977

A12-M03 **Ion exchange resins from aromatic olefinic (optionally substituted) (co)polymers**
Prior to 1977 see A12-M.
1977

A12-M04 **Ion exchange resins from other addition (co)polymers**
Excluding A12-M03. Prior to 1977 see A12-M.
1977

A12-M05 **Ion exchange resins from other polymers; chelate resins**
Prior to 1977 see A12-M.
1977

A12-P **PACKAGING**

A12-P01 **General**

A12-P01A . **(Wrapping) films and film laminates**
Optionally containing non-polymeric layers. Prior to 1986 see A12-P01.
1986

A12-P01B . **General container**
Indexed where three or more codes are required from the A12-P+ hierarchy.
1994
Previous code(s): A12-P01

A12-P02 **Bags and sacks**
Excluding blood bags for which see A12-V03B, handbags for which see A12-T.

A12-P03 **Closures**

A12-P04 **Shrink packages**

A12-P05 **Tanks, drums**
Including linings.

A12-P06 **Other containers**

A12-P06A . **Bottles, aerosol containers**
Prior to 1970 see A12-P06.
1970

A12-P06B . **Boxes, cartons, crates, rigid packs**
Prior to 1970 see A12-P06.
1970

A12-P06C . **Collapsible tubes, sachets, blister packs**
Prior to 1970 see A12-P06.
1970

A12-P07 **Rope, cord, net, webbing, strapping**

A12-P **Other packaging accessories**
e.g. handles, labels.

A12-R **BUILDING, CIVIL ENGINEERING**

A12-R01 **General**

A12-R01A . **Concrete, cement, gypsum, mortar compositions and boards**
Prior to 1986 see A12-R01.
1986

A12-R02 **Fittings**
i.e. fixtures e.g. baths, guttering.

A12-R02A . **Windows, doors**
Including frames, seals; excluding A12-R04. Prior to 1986 see A12-R02.
1986

A12-R02B . **Solar panels, collectors, heat storage devices**
Non-electrical. Prior to 1986 see the combination of codes A12-R02 and A12-H for solar panels/collectors; and A12-R02 for heat storage devices.
1986

A12-R03 **Flooring**

A12-R04 **Glazing, roof lighting**
e.g. skylights.

A12-R05 **Roofing**
Excluding roof lighting.

A12-R06 **Thermal and/or acoustic insulation; honeycomb structures**
Including all references. The code is applicable to non-specific uses. For specific uses in building see additionally the appropriate code. For specific uses in transport see A12-T04B and for pipe lagging see A12-H02D1. For other non-building use, see that use only e.g. thermally insulated bottles see A12-P06A.

A12-R07 **Walls, wall coverings and ceilings**

A12-R08 **Sealants, grouts, caulking compositions**
The code is applicable to non-specific uses. For specific use in building see additionally the appropriate code e.g. for window seals see A12-R02A and A12-R08. For non-building use see that use only e.g. in sealing batteries see A12-E06+ only.

A12-R09 **Compositions for roads, aircraft runways, paving**

A12-R **Other building, civil engineering**
e.g. road signs and road paints.

A12-S **'SEMI-FINISHED' MATERIALS**

A12-S01 **Expanded polystyrene**
Including uses. The codes A04-C02+ are not additionally searchable.

A12-S01A **. Compositions and foaming processes**
A11-B06+ is additionally coded for foaming processes. Prior to 1970 see A12-S01.
1970

A12-S02 **Expanded polyurethane, general**
The codes A05-G+ are not additionally searchable.

A12-S02A **. Foam-in-place, in-situ**
Prior to 1970 see A12-S02.
1970

A12-S02B **. Compositions and general foam-forming**
Applied from the start of 1970 to the end of 1976 and was then discontinued. Prior to 1970 see A12-S02.
1970-1976

A12-S02C **. Foaming processes**
Excluding A12-S02A. A11-B06+ is additionally coded. Prior to 1977 see A12-S02, A12-S02A and A12-S02B appropriately.
1977

A12-S02D **. Polyetherurethanes**
Prior to 1977 see A12-S02, A12-S02A and A12-S02B appropriately.
1977

A12-S02E **. Other specific polyurethanes**
Prior to 1977 see A12-S02, A12-S02A and A12-S02B appropriately.
1977

A12-S02F **. Building, civil engineering, insulation (acoustic and thermal)**
Prior to 1986 see A12-S02 to A12-S02E appropriately.
1986

A12-S03 **Expanded thermosets**
e.g. phenoplasts.

A12-S04 **Expanded polymers or general**
Excluding A12-S01+ to A12-S03. Including uses other than A12-S04B to A12-S04E.

A12-S04A **. Foamable, expandable compositions, general**
Prior to 1970 see A12-S04.
1970

A12-S04A1 **.. Foaming processes**
A11-B06+ is additionally coded. Prior to 1977 see A12-S04A.
1977

A12-S04A2 **.. Polyolefin compositions and foaming processes**
Prior to 1977 see A12-S04A.
1977

A12-S04A3 **.. Other addition and condensation resins compositions and foaming processes**
Excluding A12-S01+ to A12-S03; e.g. polyisocyanurates. Prior to 1977 see A12-S04A.
1977

A12-S04B **. Building, civil engineering, insulation (acoustic and thermal)**
Excluding A12-S04C and A12-S04D. Prior to 1977 see A12-S04 and A12-S04A appropriately.
1977

A12-S04C **. Packaging; agriculture**
Prior to 1977 see A12-S04 and A12-S04A appropriately.
1977

A12-S04D . **Fabrics, furniture, upholstery, furnishings, including decorative panels; toys; sports goods**
Prior to 1977 see A12-S04 and A12-S04A appropriately.
1977

A12-S04E . **Integral skin foams, floats, cables, electrical insulation**
Prior to 1977 see A12-S04 and A12-S04A appropriately.
1977

A12-S05 **Fibres and textiles**
Applied from the start of Plasdoc to the end of 1969 and as then discontinued.
1966-1969

A12-S05A . **Non-circular, hollow, tapered fibres**
Prior to 1970 see A12-S05.
1970

A12-S05B . **Conjugate fibres**
e.g. sea-island, side-by-side, sheath-core. Prior to 1970 see A12-S05.
1970

A12-S05C . **Textured fibres**
e.g. crimped, bulked. Prior to 1970 see A12-S05.
1970

A12-S05D . **Elastic fibres**
e.g. spandex. Prior to 1970 see A12-S05.
1970

A12-S05E . **Other fibres**
e.g. staple, monofils, fancy yarns. Prior to 1970 see A12-S05.
1970

A12-S05F . **Woven fabrics**
Prior to 1970 see A12-S05.
1970

A12-S05G . **Non-woven fabrics; felts**
Prior to 1970 see A12-S05.
1970

A12-S05H . **Knitted fabrics**
Prior to 1970 see A12-S05.
1970

A12-S05J . **Other fabrics**
e.g. net, pile, tufted. Prior to 1970 see A12-S05.
1970

A12-S05K . **Fibre forming compositions**
Prior to 1970 see A12-S05.
1970

A12-S05L . **Production of fibres**
Including drawing; see also A11-B02+, A11-B15+ and A11-C05+. Prior to 1970 see A12-S05.
1970

A12-S05M . **Treatment of fibres, textiles, general**
Prior to 1970 see A12-S05.
1970

A12-S05N . **Dyeing polyesters, polyamides or cellulosics**
Prior to 1977 see A12-S05N. See also A11-A01 to A11-A01B appropriately.
1977

A12-S05P . **Dyeing other substrates**
Excluding A12-S05N. Prior to 1977 see A12-S05M. See also A11-A01 to A11-A01B appropriately.
1977

A12-S05Q . **Printing**
Prior to 1977 see A12-S05M. See also A11-C04A.
1977

A12-S05R . **Repellent, flame proofing, crease-resistant, pill resistant and durable press treatments (non-resinous)**
e.g. water, oil, insect. Prior to 1977 see A12-S05M.
1977

A12-S05S . **Antistatic, surfactant, softener or lubricant treatments**
i.e. both resinous and non-resinous finishes. Prior to 1977 see A12-S05M.
1977

A12-S05T . **Other chemical treatments**
Non-resinous; including carbon fibre production. Prior to 1977 see A12-S05M
1977

A12-S05U . **Physical and mechanical processes**
Prior to 1977 see A12-S05M.
1977

A12-S05X . **General fibre**
Indexed for the generic case.
1994
Previous code(s): A12-S05

A12-S06 **Films**
i.e. self-supporting.

A12-S06A . **Film production**
Including tubular. Prior to 1970 see A12-S06.
1970

A12-S06B . **Film treatment**
Includes welding, chemical etching and surface treatment. Prior to 1970 see A12-S06.
1970

A12-S06C . **Having a laminated structure**
e.g. with metal foils. Prior to 1977 see A12-S06, A12-S06A and A12-S06B appropriately.
1977

A12-S06C1 .. **Of polymeric films only**
Prior to 1986 see A12-S06C.
1986

A12-S06D . **Made from mixtures of polymers**
Prior to 1977 see A12-S06, A12-S06A and A12-S06B appropriately.
1977

A12-S07 **Sheet**
Excluding reinforced, for which see A12-S08A.

A12-S07A . **Laminated**
Prior to 1970 see A12-S07.
1970

A12-S08 **Reinforced plastics**
See also A12-H02B.

A12-S08A . **Sheets, panels, laminates**
Prior to 1970 see A12-S08.
1970

A12-S08B . **Glass fibre reinforced**
Excluding A12-S08A; do not search A08-R04 unless novelty in glass fibre. Prior to 1970 see A12-S08.
1970

A12-S08C . **Other specific reinforcing materials**
e.g. carbon fibre. Prior to 1977 see A12-S08, A12-S08A and A12-S08B appropriately.
1977

A12-S08D . **Uses**
Prior to 1977 see A12-S08, A12-S08A and A12-S08B appropriately.
1977

A12-S08D1 .. **Mechanical engineering**
Prior to 1986 see A12-S08D.
1986

A12-S08D2 .. **Electrical engineering**
Prior to 1986 see A12-S08D.
1986

A12-S08D3 .. **Transport; military**
Prior to 1986 see A12-S08D.
1986

A12-S08E . **Thermoplastic reinforced composites**
Prior to 1986 see A12-S08 to A12-S08D appropriately.
1986

A12-S08F . **Fabric reinforced**
i.e. woven, non-woven or knitted of e.g. glass, aramid. Prior to 1986 see A12-S08 to A12-S08D appropriately.
1986

A12-S09 **Powders, granules**
Prior to 1977 see A12-S.
1977

A12-S09A . **Formed by mechanical treatment**
e.g. cutting, grinding. Prior to 1986 see A12-S09.
1986

A12-S10 **Plastisols**
Prior to 1986 see A12-S.
1986

A12-S **Other semi-finished materials**
e.g. solutions; bulk-, dough-, sheet- and thick- moulding compounds (BMC, DMC, SMC, TMC), micro-gels.

A12-T **TRANSPORT**

A12-T01 **Tyres and tracks, inner tubes**

A12-T01A . **Tyre-building equipment**
Prior to 1970 see A12-T01.
1970

A12-T01B . **Tyre design, studs**
e.g. tread. Prior to 1977 see A12-T01.
1977

A12-T01C . **Tyre cord (polymeric only); tyre cord adhesives (polymeric only)**
Prior to 1977 see A12-T01.
1977

A12-T01D . **Retreading, scrap recovery, disposal and use of old tyres**
Prior to 1977 see A12-T01.
1977

A12-T02 **Vehicle shells**
e.g. boat hulls.

A12-T03 **Other parts for rockets, space vehicles, jet engines and armaments**
Excluding A12-T01+ and A12-T02.

A12-T03A . **Fuels, explosives**
Prior to 1970 see A12-T03.
1970

A12-T03B . **Petroleum fuel additives**
Prior to 1977 see A12-T03A.
1977

A12-T03C . **Propellants, rocket fuels**
Prior to 1977 see A12-T03A.
1977

A12-T03D . **Military applications**
1994
Previous code(s): A12-T03

A12-T03D1 .. **Military applications (offensive)**
e.g. weapons.
1994

A12-T03D2 .. **Military applications (defensive)**
e.g. body armour (with A12-C02).
1994

A12-T04 **Other vehicle parts and accessories**

A12-T04A . **Optical**
Prior to 1977 see A12-T04.
1977

A12-T04B . **Crash pads (excluding bumpers), fascia, insulation (acoustic and thermal), upholstery**
Prior to 1977 see A12-T04.
1977

A12-T04C . **Engine systems and associated components; electrical**
Excluding jet engines; e.g. exhaust systems, carburettors, gaskets, propeller shafts. Prior to 1986 see A12-T04.
1986

A12-T04D . **Other moulded parts, fittings**
Including bumpers. Prior to 1986 see A12-T04.
1986

A12-T04E . **Safety devices**
1994
Previous code(s): A12-T04

A12-T05 **Vehicle coatings, paints**
Prior to 1986 see A12-T.
1986

A12-T06 **Drones and Unmanned Aerial Vehicles (UAV)**
Unmanned aircraft, drone.
2026

A12-T **Other transport**
e.g. pallets, travel goods, buoys.

A12-V **MEDICAL, DENTAL, COSMETICS AND VETERINARY**

A12-V00V **Medical general**
2002

A12-V01 **Medicines, pharmaceuticals**
Prior to 1970 see A12-V.
1970

A12-V02 **Prostheses**
e.g. artificial blood vessels. Prior to 1970 see A12-V.
1970

A12-V02A . **Optical**
e.g. contact lenses; for spectacle lenses see A12-L02A, in addition; for spectacle frames see A12-L03. Prior to 1986 see A12-V02.
1986

A12-V02B . **Dental**
Including fillings, adhesives. Prior to 1986 see A12-V02.
1986

A12-V03 **Equipment, splints, sutures**
Prior to 1970 see A12-V.
1970

A12-V03A . **Dressings; bandages; tampons; diapers**
Prior to 1977 see A12-V03.
1977

A12-V03B . **Respirators; oxygenating devices; blood handling apparatus and devices**
E.g. catheters. Prior to 1977 see A12-V03.
1977

A12-V03B1 .. **Birth control devices**
2006
Prior to 2006 see A12-V03B

A12-V03C . **Dental, sterilisation and hygiene; testing, diagnosis and pathology**
Prior to 1977 see A12-V01, A12-V02, A12-V03 and A12-V appropriately.
1977-1985

A12-V03C1 .. **Dental; sterilisation and hygiene**
e.g. surgical gowns, masks and sanitizers. Prior to 1986 see A12-V03C.
1986

A12-V03C2 .. **Testing, diagnosis, pathology**
Including medical blood testing (with A12-V03B). Prior to 1986, see A12-V03C.
1986

A12-V03D . **Medical or surgical instrumentation and equipment**
Excluding A12-V03B, A12-V03C1 and A12-V03C2. Prior to 1986 see A12-V03.
1986

A12-V04 **Cosmetics, toilet requisites**
Including razor blades, wigs. Prior to 1970 see A12-V.
1970

A12-V04A **. Hair requisites**
e.g. shampoo, dyes, gels. Prior to 1986 see A12-V04.
1986

A12-V04B **. Dental**
e.g. toothpaste, dental floss. Prior to 1986 see A12-V04.
1986

A12-V04C **. Skin requisites**
e.g. barrier creams, lotions, powders etc; including nail varnish, lipstick. Prior to 1986 see A12-V04.
1986

A12-V05 **Tissue engineering, stem cell culture**
2024

A12-V **Other medical, dental, cosmetics and veterinary**

A12-W **OTHER APPLICATIONS**
Excluding A12-A: to A12-V:.

A12-W01 **Gramophone records**

A12-W01A **. Video discs**
Prior to 1986 see A12-W01.
1986

A12-W02 **Lubricants and functional fluids**
Including hydraulic fluids.

A12-W02A **. Polymeric additives**
Prior to 1970 see A12-W02.
1970

A12-W03 **Advertising and display**

A12-W04 **Agriculture, horticulture**
Including animal husbandry.

A12-W04A **. Growing areas, containers**
Including greenhouses, cloches, agricultural film, plant pots, mulches. Prior to 1986 see A12-W04.
1986

A12-W04B **. Culture media**
Including fertilisers, soil improvers, seed coatings. Prior to 1986 see A12-W04.
1986

A12-W04C **. Protective chemicals**
Including bactericides, herbicides, fungicides, insecticides. Prior to 1986 see A12-W04.
1986

A12-W05 **Encapsulated articles**
Excluding electrical goods for which see A12-E04; including microcapsules.

A12-W06 **Paper compositions**
Excluding coatings for which see A12-B03+ and paper making machinery (e.g. belts, filters) for which see A12-H+.

A12-W06A **. From non-cellulosic polymeric film, pulp or fibre**
Prior to 1977 see A12-W06.
1977

A12-W06B **. Addition polymers**
Prior to 1977 see A12-W06.
1977

A12-W06C **. Condensation polymers**
Prior to 1977 see A12-W06.
1977

A12-W06D **. Natural polymers**
Excluding natural cellulose e.g. wood fibres. Prior to 1977 see A12-W06.
1977

A12-W07 **Printing; book binding**

A12-W07A **. Printing plates produced non-photographically**
Prior to 1970 see A12-W07.
1970

A12-W07B **. Lithographic printing plates produced (electro)photographically**
Prior to 1977 see A12-W07A.
1977

A12-W07C **. Other printing plates produced (electro)photographically**
Prior to 1977 see A12-W07A.
1977

A12-W07D **. Inks**
Prior to 1977 see A12-W07.
1977

A12-W07D1 **.. Inkjet inks**
2002

A12-W07E **. Dyes and pigments for inks**
Where dye/pigment is novelty. Prior to 1977 see A12-W07.
1977

A12-W07F **. Other printing equipment/processes**
e.g. equipment for book binding, printing blankets. Prior to 1977 see A12-W07.
1977

A12-W07F1 **.. Thermal transfer systems**
1994
Previous code(s): A12-W07F

A12-W07F2 .. **Printing substrates**
2007
Previous code(s): A12-W07F

A12-W08 **Musical instruments**

A12-W09 **Food**
Food packaging is also coded under A12-P+ from 2025. Prior to 1970, see A12-W.
1970

A12-W10 **Mining, oil wells**
Prior to 1970 see A12-W.
1970

A12-W10A . **Drilling mud or fluid**
Prior to 1986 see A12-W10.
1986

A12-W10B . **Well stimulation, flooding, recovery, fracturing**
Prior to 1986 see A12-W10.
1986

A12-W10C . **Cementing, plugging, lining, consolidation**
Prior to 1986 see A12-W10.
1986

A12-W11 **Chemical engineering, pollution control**
Prior to 1970 see A12-W.
1970

A12-W11A . **Reverse osmosis; semi-permeable membranes**
Including ultrafilters. Prior to 1977 see A12-W11.
1977

A12-W11B . **Enzyme containing compositions; catalysts**
Applied from the start of 1977 to the end of 1985 and was then discontinued. From the start of 1986 see A12-W11K and A12-W11L. Prior to 1977 see A12-W11.
1977-1985

A12-W11C . **Nuclear engineering**
Prior to 1977 see A12-W11.
1977

A12-W11D . **Adsorption other than with ion exchange resins**
e.g. in pollution control. Prior to 1977 see A12-W11.
1977

A12-W11E . **Pollution control using coagulants, flocculants or polyelectrolytes**
Prior to 1977 see A12-W11.
1977

A12-W11F . **Other pollution control**
Prior to 1977 see A12-W11.
1977

A12-W11G . **Heat exchangers, heat storage and heat transfer compositions, coolants, antifreeze**
Prior to 1986 see A12-W11 and A12-W12 appropriately.
1986

A12-W11H . **Polymer use in pigment/dye compositions of no other specified use**
Prior to 1986 see A12-W11.
1986

A12-W11J . **Water treatment (compositions); scale inhibition; corrosion prevention**
Including pollution control treatment. Prior to 1986 see A12-W11 and A12-W12 appropriately.
1986

A12-W11K . **Catalysts and supports**
Prior to 1986 see A12-W11B.
1986

A12-W11L . **(Immobilised) enzymes or microorganisms, microbiology**
Excluding detergents for which see A12-W12A or A12-W12B. Prior to 1986 see A12-W11B.
1986

A12-W12 **Miscellaneous compositions**
e.g. syntactic foams, fire-fighting. Prior to 1970 see A12-W.
1970

A12-W12A . **Detergents for fibres/fabrics**
Including softeners. Prior to 1977 see A12-W12.
1977

A12-W12B . **Cleaning compositions**
Excluding A12-W12A.
1977

A12-W12C . **Surfactants**
Excluding A12-W12A and A12-W12B. Prior to 1977 see A12-W12.
1977

A12-W12D . **Electroplating additives; fluxes, metallurgy, ceramic uses**
Applied from the start of 1977 to the end of 1985 and was then discontinued. Prior to 1977 see A12-W12.
1977-1985

A12-W12E . **Electroplating bath additives**
Prior to 1986 see A12-W12D.
1986

A12-W12F . **Metallurgy**
Including fluxes, metal passivation agents. Secondary uses of produced metal are not coded. Prior to 1986, see A12-W12D.
1986

A12-W12G . **Ceramics, refractory compsns.**
Prior to 1986 see A12-W12D.
1986

A12-W13 **Super absorbents**
2002

A12-W14 **Nanotechnology**
Excludes resists.
2007

A12-W15 **Controlled release**
2010

A12-W16 **Renewable energy**
2010

A12-W17 **Wearable technology**
Includes virtual reality.
2022

A12-W18 **Robotics**
Including Artificial Intelligence (AI), mechatronics, bio-medical engineering, military, nanobots, etc. To be applied in conjunction with other application codes.
2026

A12-W **Other miscellaneous applications**
e.g. coffins, watches.

A99-A **Patents with minimal polymer content**
2001

B: PHARMACEUTICALS

B01 Steroids
B02 Antibiotics *(Vaccines pre-1994, see B14-S11 from 1994)*
B03 Vitamins *(pre-2011, see B15 from 201101)*
B04 Natural Products (or Genetically Engineered), Polymers
B05 Miscellaneous
B06 Heterocyclics, Fused Ring
B07 Heterocyclics, Mononuclear
B08 Aromatics, Polycarbocyclic
B09 Alicyclics, Polycarbocyclic
B10 Aromatics and Cycloaliphatics (Mono- and Bicyclic only), Aliphatics
B11 Processes, Apparatus
B12 Diagnostics and Formulation Types *(Therapeutic, Pesticidal, Herbicidal pre-1994)*
B14 Pharmaceutical Activities
B15 Vitamins *(from 201101)*

B: PHARMACEUTICALS

The codes in this section have an initial letter B and apply only to Pharmaceuticals. For the corresponding Agricultural Chemicals codes the initial 'B' must be replaced by 'C' (before 1994). The notes referring to "B" codes apply equally to "C" codes in Agricultural Chemicals unless stated otherwise (before 1994). A compound is normally assigned only one code from sections B01 to B10 according to the priority rule of B01 before B02 etc.

Compounds of known structure are always coded according to chemical structure in B05 to B10 and B15. However, steroids, antibiotics, vitamins and natural products (and their derivatives) are coded respectively in B01, B02, B03/B15 and B04 unless stated otherwise (see B03/B15, B03-J, B03-K, B04-A07A, B04-A07E for exclusions).

The code commenced in 1963 for Pharmaceuticals (Farmdoc) and 1965 for Agricultural Chemicals (Agdoc).

B01 STEROIDS

This section covers all compounds containing the basic steroidal nucleus (cyclopentanophenanthrene ring), which may have other rings (carbocyclic or heterocyclic) fused onto it. Compounds which contain heteroatoms within the basic cyclopentanophenanthrene ring (e.g. azasteroids) are excluded. Homosteroids (containing extra carbon in the ring), norsteroids (missing one carbon in the ring) and secosteroids (bonds broken, e.g. vitamin D) are also excluded. Steroids of unknown structure are also coded under B04-B02D: (before 1994) or B04-J02 (after 1994). All groups listed include derivatives. Thus hydroxy includes ethers, esters and cyclic derivatives (linked via an oxygen atom to a steroid carbon atom). All the compound types listed may contain additional substituents, provided that they are not specified for an earlier occurring code.

Conventions used

1 Steroids containing thio-groups (e.g. mercapto or thione), are assigned the same code as the corresponding oxygen containing compounds.

2 17, 20 and 21 hydroxy include all cyclic derivatives linked via -O- to 17, 20 or 21, provided these are not linked via atoms other than O(S) to 17, 20 or 21 positions.

3 3, 17 and 20 ketone include oxime, hydrazone etc., hemi-ketal, ketal (including those cyclic derivatives which satisfy convention (2)).

4 In deciding precedence, the highest priority is given to the lowest number.

5 'Y' represents 2-4 carbon chain (including Z), but includes cyclic derivatives only when they satisfy conventions (2) or (3).

6 'Z' represents hydroxyacetyl or 1,2-di-hydroxyethyl (specific subset of Y).

B01-A	**1,3,5(10)-TRIENES**
B01-A01	**Estrones (3-ol, 17-one)**
B01-A02	**Estradiols (3,17-diol)**
B01-A03	**Other 1,3,5(10)-trienes**
B01-B	**RING 'A' DIENES**
B01-B01	**Prednisones (3,11-dione; 17-ol; 17-Z)**
B01-B02	**Prednisolones (3-one; 11,17-diol; 17-Z)**
B01-B03	**Other 1,4-dienes**
B01-B04	**Other ring 'A' dienes**

B01-C	**RING 'A' MONOENES**
B01-C01	**Cortisones (3,11-dione; 17-ol; 17-Z)**
B01-C02	**Cortisols (3-one; 11,17-diol; 17-Z)**
B01-C03	**17-hydroxylprogesterones (3-one; 17-acetyl)**
B01-C04	**Progesterones (3-one; 17-acetyl)**
B01-C05	**Testosterones (3-one; 17-ol)**
B01-C06	**Pregn(3 or 4)enes (17-Y)**
B01-C07	**Pregn(1 or 2)enes (17-Y)**
B01-C08	**Pregn(5(10) or 1(10))enes (17-Y)**
B01-C09	**Androst(3 or 4)enes**
B01-C10	**Androst(1 or 2)enes**
B01-C11	**Androst(5(10) or 1(10))enes**
B01-D	**SATURATED RING 'A'**
B01-D01	**Pregnanes (17-Y)** Including cardenolides and digoxin.
B01-D02	**Androstanes**
B01-E	**STEROIDS NO STRUCTURE**
B01-E	**Steroids (no structure)** Non-structural steroids other than steroid hormones, e.g. plant sterols. **2010**

B02 ANTIBIOTICS (Vaccines pre-1994, see B14-S11 from 1994)

Antibiotics are coded using the first letter of the parent antibiotic (where this is known or given), for example, dihydrostreptomycin is coded B02-S, chlortetracycline B02-T and adriamycin (doxorubicin) B02-D. Unnamed or general antibiotics are coded B02-Z.

Vaccines, anti-toxins used as vaccines etc. are coded B02-V02 (before 1994) and B14-S11+ (from 1994). "C" and "P" antibiotics including cephalosporins and penicillins are subdivided further. All antibiotics are coded in this section even if they are not being used for their antibiotic properties.

B02-C	**"C" ANTIBIOTICS, GENERAL**
B02-C	**General**
B02-C01	**"C" antibiotics other than cephalosporins** **1977**
B02-C02	**Ring modified cephalosporins** This code covers cephalosporins with no -(CH2)X (X=H or substituent) at 3-position, or two substituents at 7-position. **1977**
B02-C03	**Other 3-unsubstituted methyl, 7-monosubstituted cephalosporins** **1977**
B02-C04	**Other 7-monosubstituted cephalosporins** Including lactones. **1977**
B02-P	**"P" ANTIBIOTICS, GENERAL**
B02-P	**General** Includes penicillins with no 6-acetamide group.
B02-P01	**"P" antibiotics other than penicillins** **1977**
B02-P02	**6-acetamidopenicillins, alpha-substituted by N-atom** **1977**
B02-P03	**Other 6-acetamidopenicillins** **1977**
B02-P04	**Other penicillins** With beta-lactam ring with 6 position substituted by group other than acetamide **2012**

B02-V **"V" ANTIBIOTICS, VACCINES (PRE-1994)**

B02-V **General**

1963-1993

B02-V01 **"V" Antibiotics**

1986

B02-V02 **Vaccines**

Excluding interferon. The code B12-A06 for antiviral is not additionally searchable.

1986-1993

Now coded as: B14-S11+

B02-V03 **Interferon**

Not additionally searchable as polypeptide B04-C01+.

1986-1993

Now coded as: B04-H05+

B02-Z **"Z" ANTIBIOTICS, GENERAL**

B02-Z **General**

B02-Z01 **Z antibiotics general**

2022

B03 VITAMINS

From 2011 vitamins have been transferred to B15 codes. B03 codes remain valid and searchable for records prior to 2011. Each sub-group includes related compounds with similar activity and pro-vitamins. The following compounds, although having vitamin activity, are indexed under the appropriate chemical classification only: nicotinic acid (B07-D04+), pantothenic acid (B10-C04D), folic acid (B06-D09), choline (B10-A22), inositol (B10-E04A), biotin (B06-F03), p-aminobenzoic acid (B10-B02A), linoleic acid (B10-C04E2) and other unsaturated acids.

retired end 2010

B03-A **A and carotenoids**

now coded B15-A00+

retired end 2010

B03-B **B1 (thiamine)**

now coded B15-B01+

retired end 2010

B03-C **B2 (riboflavin)**

now coded B15-B02+

retired end 2010

B03-D **B6 (pyridoxine)**

now coded B15-B06+

retired end 2010

B03-E **B12 and cobalamine**

now coded B15-B12+

retired end 2010

B03-F **C (ascorbic acid)**

now coded B15-C00+

retired end 2010

B03-G **D (calciferol)**

now coded B15-D00+

retired end 2010

B03-H **E and tocopherols**

now coded B15-E00+

retired end 2010

B03-J **Vitamin K**

This code is applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only.

now coded B15-K00+

retired end 2010

B03-K **Vitamin P and others**

This code is applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only.

now coded B15-P00+

retired end 2010

B03-L **General**
now coded B15-Z00
retired end 2010

B04 NATURAL PRODUCTS (OR GENETICALLY ENGINEERED), POLYMERS

In general, natural products are coded according to their most descriptive feature (usually chemical), thus

(i) milk is coded B04-B04K only, and not also B04-B04G (gland extract) or B04-B04L (mammalian extract);

(ii) a polysaccharide obtained from a plant is coded B04-C02D only, and not also B04-A07F.

The following compounds and their derivatives are coded in B04 only and not also according to their chemical structure:- tropanes, scopolamine, quinine, quinidine, lysergic acid, morphine, yohimbanes, xanthines, rotenone, pyrethroids, gibberellins, nucleosides and nucleotides, prostaglandins. If a compound's structure or activity suggest it **may** be a natural product analogue it is coded in B04 and structurally. To distinguish between specifically genetically engineered products and those prepared by other methods, the E suffix (engineered) is appended to codes introduced from 1994 in the appropriate format. For example, Interleukin 6 prepared by exogenous gene expression in a host is coded B04-H02G0E. All codes which have genetically engineered equivalents are marked #.

B04-A	**ALKALOIDS, PLANT EXTRACTS**
B04-A01	**Belladonna** Including tropanes and scopolamines.
B04-A02	**Cinchona** Including quin(id)ines.
B04-A03	**Ergot** Including lysergic acid.
B04-A04	**Opium** Including morphines and morphinans from 198601 but excluding apomorphine.
B04-A05	**Rauwolfia** Including yohimbanes.
B04-A06	**Xanthines** i.e. 2,6-dioxopurines.
B04-A07	**Plant extracts general** **1963-1965**

B04-A07A . **Other alkaloids**
Applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only e.g. strychnine is coded B06-E05.
1965

B04-A07A1 .. **Vinca alkaloids**
Includes vincristine, vinblastine, vinorelbine and vindesine.
2010

B04-A07B . **Derris**
e.g. rotenone.
1965

B04-A07C . **Pyrethrins**
1965

B04-A07D . **Peat, straw, cereal, seeds, bran, whole plants, juice**
1965-1993
Now coded as: B04-A08, B04-A09

B04-A07D1 .. **Peat, humic acid**
1986-1993
Now coded as: B04-A09J

B04-A07D2 .. **Seeds, husks from seeds, seed meal, cereal, grain**
1986-1993
Now coded as: B04-A09F

B04-A07D3 .. **Wood shavings, bark, sawdust**
1986-1993
Now coded as: B04-A09G

B04-A07D4 .. **Grass, straw, hay, plant stems, sap produced by pressing**
Excluding B04-A07D3.
1986-1993
Now coded as: B04-A09H

B04-A07D5 .. **Whole plants, leaves, whole mushrooms, flowers, plants produced by tissue culture**
Excluding B04-A07D4. B11-A is also coded.
1986-1993
Now coded as: B04-A08+, B04-A09A, B04-A09B, B04-A09D

B04-A07E . **Glycosides, saponins**
This code is applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only, e.g. glycyrrhizin is coded B07-A02B. Includes steroidal saponins.
1965

B04-A07F . **Plant extract general**
1963-1993
Now coded as: B04-A10

B04-A07F1 .. **Mushrooms, toadstools extracts**
1986-1993
Now coded as: B04-A10A

B04-A07F2 .. **Other plant extracts**
1986-1993
Now coded as: B04-A10B+, B04-A09C

B04-A08 # **Plant divisions and whole plants general and other**
E suffix is appended to respective whole plant codes for transgenic plants. N.B. Plant cells and plant tissue are coded B04-F08.
1994
Previous code(s): B04-A07D

B04-A08A # . **Bryophytes**
e.g. liverworts and mosses.
1994
Previous code(s): B04-A07D5

B04-A08A1 # .. **Marchantiophyta (liverworts)**
2012

B04-A08A2 # .. **Bryophyta (mosses)**
2012

B04-A08A3 # .. **Anthocerotophyta (hornworts)**
2012

B04-A08B # . **Pteridophytes**
e.g. ferns.
1994
Previous code(s): B04-A07D5

B04-A08B1 # .. **Psilotopsida**
2012

B04-A08B2 # .. **Equisetopsida**
2012

B04-A08B3 # .. **Marattiopsida**
2012

B04-A08B4 # .. **Polypodiopsida**
2012

B04-A08C # . **Spermatophytes**
1994-2011
Previous code(s): B04-A07D5

B04-A08C1 # .. **Gymnosperms**
e.g. conifers.
1994-2011
Previous code(s): B04-A07D5, now coded as B04-A08F+

B04-A08C2 # .. **Angiosperms**
e.g. flowering plants, grass, dicotyledons and monocotyledons.
1994-2011
Previous code(s): B04-A07D5, now coded as B04-A08G+

B04-A08D # . **Fungi (higher)**
e.g. mushrooms, toadstools, but not unicellular or microscopic fungi.
1994
Previous code(s): B04-A07D5

B04-A08D1 # .. **Ascomycota**
2012

B04-A08D2 # .. **Basidiomycota**
2012

B04-A08F # . **Gymnosperms**
2012
Previous code(s): B04-A07D5, B04-A08C1

B04-A08F1 # .. **Pinophyta (conifers)**
2012

B04-A08F2 # .. **Ginkgophyta**
2012

B04-A08F3 # .. **Cycadophyta (cycads)**
2012

B04-A08F4 # .. **Gnetophyta**
2012

B04-A08G # . **Angiosperms**
2012
Previous code(s): B04-A07D5, B04-A08C2

B04-A08G1 # .. **Monocots**
2012

B04-A08G2 # .. **Dicots**
2012

B04-A09 # **Plant parts general and other**
Plant parts derived from specific plant species are additionally coded in B04-A08.
1994
Previous code(s): B04-A07D

B04-A09A # . **Leaves**
1994
Previous code(s): B04-A07D5

B04-A09B # . **Flowers and parts**
Excluding pollen.
1994
Previous code(s): B04-A07D5

B04-A09C # . **Pollen**
1994
Previous code(s): B04-A07F, B04-B04C2

B04-A09D # . **Roots**
1994
Previous code(s): B04-A07D5

B04-A09F # . **Seeds, seed husks, seed meal, cereal, grain, nuts, bran**
1994
Previous code(s): B04-A07D2

B04-A09G # . **Wood shaving, bark, sawdust**
1994
Previous code(s): B04-A07D3

B04-A09H # . **Straw, hay, stems, sap, plant resin**
includes propolis
1994
Previous code(s): B04-A07D4

B04-A09J # . **Peat, humic acid**
1994
Previous code(s): B04-A07D1

B04-A09K # . **Fruit**
2006
Previous code(s): B04-A09

B04-A10 # **Plant extracts general and other**
Plant extracts derived from specific plant species are additionally coded in B04-A08. When the use of "Chinese herbal medicine" is claimed this code is applied.
1994
Previous code(s): B04-A07F

B04-A10A # . **Fungal extracts**
e.g. mushrooms, toadstools, but not unicellular or microscopic fungi.
1994
Previous code(s): B04-A07F1

B04-A10B # . **Leaf extracts**
1994
Previous code(s): B04-A07F2

B04-A10C # . **Flower extracts and extracts from flower parts**
Excluding pollen.
1994
Previous code(s): B04-A07F2

B04-A10D # . **Pollen extract**
1994
Previous code(s): B04-A07F, B04-B04C2

B04-A10F # . **Root extracts**
1994
Previous code(s): B04-A07F2

B04-A10G # . **Seed, seed husk, seed meal, cereal, grain and nut extracts**
1994
Previous code(s): B04-A07F2

B04-A10H # . **Wood shaving, bark, sawdust extracts**
1994
Previous code(s): B04-A07F2

B04-A10J # . **Straw, hay, stem and sap extracts**
1994
Previous code(s): B04-A07F2

B04-A10K # . **Fruit extract**
2006
Previous code(s): B04-A10

B04-A98 **Patent with herbal composition**
2012

B04-A99 **Patent with hybrid plant**
2012

B04-B **ANIMAL, MICROBIOLOGICAL AND GENERAL EXTRACTS**

B04-B01 **Oils, fats general**
1963-1965

B04-B01A . **Halogenated oils, waxes, etc.**
1965

B04-B01B . **Fats, lanolin, lipids, glycolipids**
1965

B04-B01C . **Oils and waxes general**

B04-B01C1 .. **Vegetable oils and waxes**
e.g. sunflower, soy bean and cotton seed oil.
1986

B04-B01C2 .. **Animal oils and waxes**
e.g. spermaceti, cod liver oil, honeycomb and beeswax.
1986

B04-B01C3 .. **Mineral oils and waxes**
e.g. vaseline, petroleum liquid paraffin and synthetic oils.
1986

B04-B01D . **Other oil and wax derivatives**
Oils and waxes that are hydrogenated and/or modified by a polymer. May be applied in conjunction with codes from B04-B01C.
Previous code(s): B04-B01C
2010

B04-B02 **Microorganisms, hormones, enzymes general**
1963-1965

B04-B02A . **Gibberellins**
1965

B04-B02B . **Microorganisms general**
1965-1993
Now coded as: B04-F01

B04-B02B1 .. **Bacteria**
e.g. Staphylococcus, Bacillus, Rickettsia.
1986-1993
Now coded as: B04-F10+

B04-B02B2 .. **Fungi**
e.g. Candida, Aspergillus.
1986-1993
Now coded as: B04-F09+

B04-B02B3 .. **Algae**
e.g. Spirella.
1986-1993
Now coded as: B04-F08

B04-B02B4 .. **Viruses**
1986-1993
Now coded as: B04-F11

B04-B02B5 .. **Other microorganisms**
e.g. Mycoplasma.
1986-1993
Now coded as: B04-F06, B04-F07, B04-F10A4

B04-B02C . **Enzymes general**
The code B04-B02C is used when the type of enzyme is unspecified. When specific enzymes are given then these are coded in B04-B02C1 to B04-B02C7 in preference to B04-B02C.
1965-1993
Now coded as: B04-L01

B04-B02C1 .. **Coenzymes**
1977-1993
Now coded as: B04-L02

B04-B02C2 .. **Oxidoreductases**
1977-1993
Now coded as: B04-L03+

B04-B02C3 .. **Hydrolases**
e.g. chymotrypsin, trypsin, papain, fibrinolysin, streptokinase, streptodorinase, collagenase, plasmin, plasminogen.
1977-1993
Now coded as: B04-L05+

B04-B02C4 .. **Transferases**
1986-1993
Now coded as: B04-L04+

B04-B02C5 .. **Lyases**
1986-1993
Now coded as: B04-L06

B04-B02C6 .. **Isomerases**
1986-1993
Now coded as: B04-L07

B04-B02C7 .. **Ligases (synthetases)**
1986-1993
Now coded as: B04-L08

B04-B02D . **Hormones and steroids general**
The code B12-G04 or B04-C01 is not additionally applied with B04-B02D2 to B04-B02D4 unless a structure is given in the patent.
1965-1993
Now coded as: B04-J01, B04-J02, B04-J03, B04-J04, B04-J05

B04-B02D1 **.. Steroidal hormones (no complete structure)**
1986-1993
Now coded as: B04-J02

B04-B02D2 **.. Pancreatic hormones**
1986-1993
Now coded as: B04-J03+

B04-B02D3 **.. Thyroid and parathyroid hormone**
e.g. calcitonin, thyrocalcitonin, parathyroid hormone and their derivatives.
1986-1993
Now coded as: B04-J04+

B04-B02D4 **.. Pituitary gland hormones**
e.g. neurohypophyseal, intermedin, chromophorotropic, melanocyte stimulating, melanophoric hormone, adreno-corticotropic hormone (ACTH) corticotropic, follicle stimulating (FSH), interstitial cell stimulating, prolactin, ammotrophin, somatotropin, thyroid stimulating, thyrotropic, thyrotropin, vasopressin, chorionic gonadotropin, luteinising, growth and their derivatives.
1986-1993
Now coded as: B04-J05+

B04-B02E **. Prostaglandins**
From 197501 prostaglandins are coded B04-B02E only, and no longer according to their chemical structure.
1975-1993
Now coded as: B04-H03+

B04-B03 **Nucleosides and nucleotides general**
Coenzymes which are nucleotides are also coded B04-B02C1 (before 1994) or B04-L02 (from 1994). Nucleosides and nucleotides containing xanthine bases are coded B04-B03+ and not B04-A06.
1965

B04-B03A **. Nucleosides**
e.g. adenosine, guanosine, inosine, cytidine, uridine, thymidine. From 2005 chemically modified nucleosides are coded B04-B03D.
1986

B04-B03B **. Nucleotides**
e.g. adenylic acid, cytidylic acid. From 2005 chemically modified nucleotides are coded B04-B03E.
1986

B04-B03C **. Oligonucleotides**
This code is applied whenever the term "Oligonucleotide" is used in a patent, or otherwise to chains of 3 to 6 nucleotide units.
1994
Previous code(s): B04-B04A1, B04-B03B

B04-B03D **. Modified nucleosides**
E.g. C in ring, open chain structure. Compounds where the only modification is a deoxyribose sugar are searched as nucleosides.
2005
Previous code: B04-B03A

B04-B03E **. Modified nucleotides**
E.g. C in ring, open chain structure. Compounds where the only modification is a deoxyribose sugar are searched as nucleotides.
2005
Previous code: B04-B03B

B04-B03F **. Modified oligonucleotides**
Compounds where the only modification is one or more deoxyribose sugars are searched as oligonucleotides. For the most general references only.
2018

B04-B03F1 **.. Capped modified oligonucleotides**
Oligonucleotide must be composed of 7 or fewer nucleobases, see B04-E: for associated capped codes when 8 bases or longer. Includes trinucleotide cap and trinucleotide mRNA cap, particularly those based on m7G (7-methylated-guanine) and analogs.
2024

B04-B03F2 **.. Other modified oligonucleotides**
Oligonucleotide must be composed of 7 or fewer nucleobases.
2024

B04-B04 **Animal extract general**
1963-1965

B04-B04A **. Proteins, nucleic acids, cells general**
For antigens see B04-B04C.
1965-1993
Now coded as: B04-E01, B04-F01, B04-N04, B04-N05, B04-N06

B04-B04A1 **.. DNA, vector DNA, RNA, nucleic acids.**
1986-1993
Now coded as: B04-E02+, B04-E03+, B04-E04, B04-E05, B04-E06, B04-E07, B04-E08

B04-B04A2 **.. Plant cells**
1986-1993
Now coded as: B04-F08

B04-B04A3 **.. Animal cells**
For blood cells see B04-B04D, microbial cells see B04-B02B.
1986-1993
Now coded as: B04-F02, B04-F05, B04-F07

B04-B04A4 **.. Proteins from plants and mushrooms**
e.g. gluten.
1986-1993
Now coded as: B04-N01+

B04-B04A5 **.. Proteins from microorganisms**
1986-1993
Now coded as: B04-N03+

B04-B04A6 **.. Proteins from animals or insects**
e.g. gelatin, egg white, glycoproteins, gamma-globulins, silk.
1986-1993
Now coded as: B04-N02+

B04-B04B **. Animal excrements general**
1965

B04-B04B1 **.. Urine**
1994
Previous code(s): B04-B04B

B04-B04B2 **.. Faeces**
1994
Previous code(s): B04-B04B

B04-B04C **. Antigens, general Antibody (pre-1994)**
1965
Previous code(s): B04-G01

B04-B04C1 **.. Microbial antigen**
When used as a vaccine then B02-V02 is coded (before 1994) or B14-S11+ (from 1994).
1986

B04-B04C2 **.. Other antigens**
Material which is antigenic is also coded.
1986

B04-B04C3 **.. Microbial antibody**
1986-1993
Now coded as: B04-G07, B04-G08, B04-G09

B04-B04C4 **.. Anticancer antibody**
1986-1993
Now coded as: B04-G05

B04-B04C5 **.. Monoclonal antibody**
1986-1993
Now coded as: B04-G21

B04-B04C6 **.. Other antibody including immunoglobulin and hemaglutinin**
1986-1993
Now coded as: B04-G02, B04-G03, B04-G04, B04-G06, B04-G10, B04-G20, B04-G22

B04-B04C7 **.. Haptens**
A substance which can combine with antibody but cannot itself initiate an immune response unless it is attached to a carrier molecule.
1994
Previous code(s): B04-B04C

B04-B04C8 **.. Cancer antigen**
2005

B04-B04C9 **.. Allergen**
An antigenic substance capable of producing immediate type hypersensitivity (i.e. an allergic reaction). The specific substance which is allergenic is also coded (e.g. B04-A08C2 + B04-A09C for pollen).
2005

B04-B04D **. Blood and derivatives general**
1965

B04-B04D1 **.. Blood cells and derivatives**
Including leucocytes, erythrocytes, lymphocytes. These are not coded under B04-B04A3.
1986-1993
Now coded as: B04-F04

B04-B04D2 **.. Blood proteins**
Excluding blood factors. e.g. serum albumin, hemoglobin, fibrinogen (prior to 198601 see also B04-B04A). From 1994 all clotting factors including fibrin and fibrinogen are coded under B04-H19.
1986

B04-B04D3 **.. Blood factors**
e.g. clotting factors, thrombin (see also B04-B02C3 for prothrombin, fibrinogen).
1986-1993
Now coded as: B04-H01, B04-H13, B04-H14. B04-H15, B04-H19

B04-B04D4 **.. Blood serum, plasma**
Excluding B04-B04D2/3.
1986

B04-B04D5 .. **Whole blood**
Excluding B04-B04D1 to B04-B04D4.
1986

B04-B04E . **Bone, marrow, nails, teeth**
Includes skin, horn and hair as well as extracts.
1965

B04-B04F . **Enzyme inhibitors**
1965-1993
Now coded as: B04-M01

B04-B04G . **Gland extracts**
Includes saliva, snake venom and musk.
1965

B04-B04H . **Organ extracts**
Including extracts from all body organs, such as heart, kidney, liver, placenta, nerve, brain, lung, pancreas, intestine, stomach.
1965

B04-B04J . **Metabolic factors**
1965-1993
Now coded as: B04-H01, B04-H04+, B04-H06+, B04-H08, B04-H09, B04-H10,B04-H12, B04-H13, B04-H14, B04-H16,B04-H17, B04-H18

B04-B04K . **Milk**
Including derivatives.
1965

B04-B04L . **Other mammalian extracts**
This code is used for mammalian extracts only (from 1994). For whole mammals see B04-P.
1965

B04-B04M . **Other non-mammalian extracts**
This code is used for non-mammalian extracts only (from 1994). For whole animals see B04-P.
1965

B04-B04M1 .. **Arthropod**
2012

B04-B04M2 .. **Amphibian**
2012

B04-B04M3 .. **Reptile**
2012

B04-B04M4 .. **Fish**
2012

B04-B04M5 .. **Avian**
2012

B04-B04M6 .. **Trochozoa**
Includes annelids (worms) and molluscs.
2017

B04-B04N . **Eggs**
Used when the source of the eggs is not specified or where all three subcodes are applicable. Also includes egg parts and egg extracts. Avian eggs code as B04-B04N1 from 201501.
2014

B04-B04N1 .. **Avian eggs**
2015
Previous code(s): B04-B04N

B04-B04N2 .. **Fish eggs, fish roe**
2015

B04-B04N3 .. **Eggs from other sources**
Includes insect and reptile eggs.
2015

B04-C **POLYMERS**
The generic codes B04-C01, B04-C02 and B04-C03 are only used for general disclosures which would otherwise require several specific codes. Therefore when a specific code is searched, the corresponding generic code must also be searched.

B04-C01 **Polypeptides general**
Polypeptides containing four or more peptide units are coded from B04-C01A to B04-C01G only, tripeptides are coded both B04-C01A and according to their chemical structure (in B05 to B10) and dipeptides are coded according to their chemical structures only. Cystine represents two amino acid residues. Polypeptide/protein sequences are further coded under B04-N.

B04-C01A . **3 to 5 alpha amino acid residues**
1986

B04-C01B . **6 to 10 alpha amino acid residues**
1986

B04-C01C . **11 to 15 alpha amino acid residues**
1986

B04-C01D . **16 to 20 alpha amino acid residues**
1986

B04-C01E . **21 to 25 alpha amino acid residues**
1986

B04-C01F **. 26 to 30 alpha amino acid residues**
1986

B04-C01G **. 31 or more alpha amino acid residues**
This code also includes proteins of defined amino acid sequence.
1986

B04-C01H **. Modified and/or cyclic peptides**
Includes analogues. Should be applied in conjunction with a length code selected from B04-C01A to B04-C01G. Not used for peptides cyclised purely by disulfide bridge formation.
2005

B04-C02 **Polysaccharides general**
These must contain at least 7 sugar residues in sequence.

B04-C02A **. Cellulose and derivatives**
1986

B04-C02A1 **.. Unmodified cellulose**
1986

B04-C02A2 **.. Cellulose ethers**
e.g. carboxymethylcellulose.
1986

B04-C02A3 **.. Cellulose esters**
e.g. cellulose acetate.
1986

B04-C02B **. Starch, dextrin and derivatives**
1986

B04-C02B1 **.. Cyclodextrin and derivatives**
1986

B04-C02B2 **.. Unmodified starch**
1986

B04-C02B3 **.. Modified starch**
Includes derivatives of starch such as carboxymethylstarch.
2010
Previous code(s): B04-C02B

B04-C02B4 **.. Dextrin**
2012

B04-C02C **. Dextran**
1986

B04-C02D **. Polysaccharides from plant**
Excluding cellulose, starch, dextran, dextrin. Including pectin, plant gums, alginate, agar. Code(s) for the appropriate plant division(s) are also applied, if source plant(s) known.
1986

B04-C02E **. Polysaccharides from animal, bird, reptile or arthropod**
1986

B04-C02E1 **.. Heparin (optionally modified)**
1986

B04-C02E2 **.. Chondroitin (optionally modified)**
1986

B04-C02E3 **.. Chitin (optionally modified)**
The code B04-C02F can also be searched if chitin is obtained from fungal source.
1986

B04-C02E4 **.. Hyaluronic acid (optionally modified)**
2012

B04-C02F **. Polysaccharides from microbial sources**
Polysaccharide which is modified microbiologically can also be searched under the code for the original polysaccharide.
1986

B04-C02V **. Lipopolysaccharide**
1994
Previous code(s): B04-C02,B04-B01B

B04-C02X **. Oligosaccharides**
This code is applied whenever the term oligosaccharide is used in a patent, or otherwise to chains of 3 to 6 sugar units. Tetrahydropyran(furan) are **not** coded unless they are ring modified.
1994

B04-C03 **Polymers general**

B04-C03A **. Poly N-vinyl-lactams**
1975

B04-C03B **. Other addition**
1975

B04-C03C **. Polyethers**
Including thioethers and sulfides.
1975

B04-C03D **. Natural, other condensation**
1975

B04-C03E # **. Dendrimers**
2002

B04-C03F **. Silicones**
2005
Previous code: B04-C03D

B04-D OTHER NATURAL PRODUCTS

B04-D01 **Sugars (mono- or disaccharides)**
This code is used for sugars of undefined structure only, or when the sugar is an essential ingredient of a pharmaceutical composition. Includes molasses.

B04-D01A . **Honey**
2011

B04-D02 **Other natural products**
Includes any other natural product not covered by other codes e.g. clay, minerals, etc

B04-D03 **Biomass**
1994
Previous code(s): B04-A07D, B04-A07F, B04-B02B, B04-B04B, B04-B04L, B04-B04M

B04-E **NUCLEIC ACIDS**
Nucleic acids contain 7 or more nucleotide residues. E suffix is not appended to the codes in this section.
1994

B04-E01 **Nucleic acid general and other**
This code covers only non-specific or general nucleic acids. It is **not** used to replace three or more codes for specific forms of DNA/RNA which are all coded individually in section B04-E02 to B04-E08. For example, if a patent claims: (1) a DNA sequence comprising a gene coding for a 5-HT receptor. (2) a plasmid containing (1). (3) a nucleic acid probe. (4) an antisense oligonucleotide. the codes are: B04-B03C, B04-E03D, B04-E05, B04-E06, B04-E08.
1994
Previous code(s): B04-B04A1

B04-E01A . **DNA**
Deoxyribonucleic acid.
2018

B04-E01B . **RNA**
Ribonucleic acid.
2018

B04-E01X . **Capped nucleic acids**
Includes trinucleotide capped sequences, particularly those based around m7G (7-methylated guanine) and analogs. To be searched alongside all other applicable codes from B04-E relating to the nucleic acid.
2024

B04-E02 **Altered DNA coding sequences**
These codes include engineered, recombinant constructs, chimeric genes, heterologous genes, fusion genes, allelic variants and mutant alleles. The codes include RNA transcripts of these sequences.
1994
Previous code(s): B04-B04A1

B04-E02A . **Encoding antibodies**
1994
Previous code(s): B04-B04A1

B04-E02B . **Encoding modifiers of cell function and growth**
1994
Previous code(s): B04-B04A1

B04-E02C . **Encoding hormones**
1994
Previous code(s): B04-B04A1

B04-E02D . **Encoding receptors**
1994
Previous code(s): B04-B04A1

B04-E02E . **Encoding enzymes**
1994
Previous code(s): B04-B04A1

B04-E02F . **Encoding other protein/polypeptide**
1994
Previous code(s): B04-B04A1

B04-E02G . **Oncogene**
2002

B04-E02H . **Encoding fusion protein**
2002

B04-E02J . **Encoding antigens**
2007
Previous code(s): B04-E02F

B04-E02K . **Encoding nucleic acid**
2009

B04-E03 **Other DNA coding sequences**
These codes cover wild type genes and their fragments, and include their RNA transcripts.
1994
Previous code(s): B04-B04A1

B04-E03A . **Encoding antibodies**
1994
Previous code(s): B04-B04A1

B04-E03B . **Encoding modifiers of cell function and growth**
1994
Previous code(s): B04-B04A1

B04-E03C . **Encoding hormones**
1994
Previous code(s): B04-B04A1

B04-E03D . **Encoding receptors**
1994
Previous code(s): B04-B04A1

B04-E03E . **Encoding enzymes**
1994
Previous code(s): B04-B04A1

B04-E03F . **Encoding other protein/polypeptide**
1994
Previous code(s): B04-B04A1

B04-E03G . **Oncogene**
2002

B04-E03H . **Encoding fusion protein**
2002-2008

B04-E03J . **Encoding antigens**
2007
Previous code(s): B04-E03F

B04-E03K . **Encoding nucleic acid**
2009

B04-E04 **Promoters, enhancers, regulatory sequences, upstream activating sequences**
1994
Previous code(s): B04-B04A1

B04-E05 **Primers, probes**
Probes can be coded in conjunction with B12-K04G codes, e.g. a probe for detecting cancer is coded B04-E05 and B12-K04G2A. A new method for diagnosing cancer utilising probes is coded B04-E05, B11-C08E5/B11-C08F8 and B12-K04G2A.
1994
Previous code(s): B04-B04A1

B04-E06 **Antisense sequences**
Excluding antisense probes.
1994
Previous code(s): B04-B04A1

B04-E07 **Other non-coding sequences**
This code includes ribozyme, ribosomal, transfer and mitochondrial nucleic acids.
1994
Previous code(s): B04-B04A1

B04-E07A . **Ribozyme**
An RNA molecule that has catalytic activity.
2005

B04-E07B . **DNAzyme**
A DNA molecule that has catalytic activity.
2005

B04-E07C . **siRNA (short interfering RNA)**
Double stranded short RNA molecules that bind to RNA and target them for degradation and/or destruction.
2005

B04-E07D . **miRNA**
Micro RNA.
2005

B04-E07E . **shRNA**
Small hairpin RNA.
2006

B04-E07F . **Aptamer**
2007

B04-E08 **Vectors, plasmids, cosmids, transposons**
Viral vectors are also coded under virus (B04-F11+).
1994
Previous code(s): B04-B04A1

B04-E09 **Single Nucleotide Polymorphism (SNP)**
2002

B04-E10 **Peptide nucleic acid**
2002

B04-E11 **Other analog nucleic acid**
2002

B04-E12 **Reporter/marker nucleic acid**
2015

B04-E13 **CRISPR**
Includes SPIDR (Spacer Interspersed Direct Repeats). May be additionally searched with CRISPR nuclease (B04-L05A2) if the system also contains a claimed enzymatic component e.g. CRISPR/Cas system.
2015

B04-E14 **Bacterial nucleic acid**
2021

B04-E15 **Viral nucleic acid**
2021

B04-E16 **Fungal nucleic acid**
2022

B04-E99 **Patent with Geneseq record**
2008

B04-F **CELLS, MICROORGANISMS, TRANSFORMANTS, HOSTS**
E suffix is appended to codes for cells which are products of genetic manipulation, but not to naturally occurring mutant microbial strains, products of cell fusion or mutagenesis.
1994

B04-F01 # **Cells, microorganisms, transformants, hosts, cell lines, tissue general**
1994
Previous code(s): B04-B02B, B04-B04A, B04-B04D1

B04-F02 # **Mammal (including human)**
1994
Previous code(s): B04-B04A3

B04-F02A # . **Cancer cells/Carcinoma**
2002

B04-F02B # . **Stem cells**
Cell that can replicate indefinitely and differentiate into other cells.
2005

B04-F02C # . **Progenitor cells**
Cell that is more advanced than a stem cell, giving rise to a distinct cell lineage.
2017

B04-F03 # **Sperm, ova (germ cells)**
1994
Previous code(s): B04-B02D

B04-F04 # **Blood cells (general)**
This code covers non-specific blood cells or when three or more specific types of blood cell are mentioned.
1994
Previous code(s): B04-B04D1

B04-F04A # . **Red blood cells**
2006
Previous code(s): B04-F04

B04-F04B # . **White blood cells (general)**
This code is used when non-specific white blood cells are mentioned or when three or more white blood cell types are mentioned.
2006
Previous code(s): B04-F04

B04-F04B1 # .. **Lymphocytes**
2006
Previous code(s): B04-F04

B04-F04B1A ... **T-lymphocytes**
2006
Previous code(s): B04-F04

B04-F04B1B ... **B-lymphocytes**
2006
Previous code(s): B04-F04

B04-F04B2 # .. **Other white blood cells**
2006
Previous code(s): B04-F04

B04-F04B2A ... **Dendritic cells**
2006
Previous code(s): B04-F04

B04-F04B2B ... **Macrophages**
2006
Previous code(s): B04-F04

B04-F04B2C ... **Neutrophils**
2006
Previous code(s): B04-F04

B04-F04B2D ... **Other miscellaneous white blood cells**
2006
Previous code(s): B04-F04

B04-F05 # **Hybridoma**
1994
Previous code(s): B04-B04A3

B04-F05A # . **Chimeric & fused cells**
Cells comprising or formed from components derived from two separate cell types, not including hybridomas coded under B04-F05.
2005

B04-F06 # **Protozoa**
1994
Previous code(s): B04-B02B5

B04-F07 # **Other animal**
1994
Previous code(s): B04-B04A3

B04-F07A # . **Arthropod**
2002

B04-F07B # . **Amphibian**
2002

B04-F07C # . **Reptile**
2002

B04-F07D # . **Fish**
2002

B04-F07E # . **Avian**
2006

B04-F08 # **Plant/algae**
1994
Previous code(s): B04-B04A2, B04-B02B3

B04-F08A # . **Algae**
Includes diatoms.
2008

B04-F09 # **Yeast/fungus general and other**
1994
Previous code(s): B04-B02B2

B04-F09A # . **Aspergillus**
e.g. A. nidulans, A. fumigatus, A. flavus, A. niger, A. oryzae.
1994
Previous code(s): B04-B02B2

B04-F09B # . **Neurospora**
e.g. N. crassa.
1994
Previous code(s): B04-B02B2

B04-F09C # . **Saccharomyces**
e.g. S. pombe, S. cerevisiae (brewer's yeast).
1994
Previous code(s): B04-B02B2

B04-F09D # . **Pichia**
e.g. Pichia pastoris.
2005

B04-F09E # **. Multicellular fungi, non-higher**
2005

B04-F10 # **Bacteria general**
1994
Previous code(s): B04-B02B1

B04-F10A # **. Gram-negative genera, general and other**
1994
Previous code(s): B04-B02B1

B04-F10A1 # **.. Bordetella**
e.g. B. pertussis.
1994
Previous code(s): B04-B02B1

B04-F10A2 # **.. Borrelia**
1994
Previous code(s): B04-B02B1

B04-F10A3 # **.. Escherichia**
e.g. E. coli.
1994
Previous code(s): B04-B02B1

B04-F10A4 # **.. Mycoplasma**
e.g. M. pneumoniae, M. mycoides.
1994
Previous code(s): B04-B02B

B04-F10A5 # **.. Neisseria**
e.g. N. gonorrhoeae, N. meningitidis.
1994
Previous code(s): B04-B02B1

B04-F10A6 # **.. Pseudomonas**
e.g. P. aeruginosa, P. mallei.
1994
Previous code(s): B04-B02B1

B04-F10A7 # **.. Rickettsia**
e.g. R. prowazekii.
1994
Previous code(s): B04-B02B1

B04-F10A8 # **.. Salmonella**
e.g. S. typhi.
1994
Previous code(s): B04-B02B1

B04-F10A9 # **.. Vibrio**
e.g. V. cholerae, V. parahemolyticus.
1994
Previous code(s): B04-B02B1

B04-F10B # **. Gram-positive genera, general and other**
1994
Previous code(s): B04-B02B1

B04-F10B1 # **.. Bacillus**
e.g. B. subtilis.
1994
Previous code(s): B04-B02B1

B04-F10B2 # **.. Mycobacteria**
e.g. M. tuberculosis, M. bovis, M. leprae, M. phlei, BCG.
1994
Previous code(s): B04-B02B1

B04-F10B3 # **.. Staphylococcus**
e.g. S. aureus, S. epidermidis.
1994
Previous code(s): B04-B02B1

B04-F10B4 # **.. Streptococcus**
e.g. S. pyogenes, S. fecalis.
1994
Previous code(s): B04-B02B1

B04-F10B5 # **.. Streptomyces**
e.g. S. griseus, S. scabies.
1994
Previous code(s): B04-B02B1

B04-F11 # **Viruses**
Including bacteriophage lambda and viral vectors.
1994
Previous code(s): B04-B02B4

B04-F11A # **. DNA virus general**
Virus that infects foreign DNA into host cell, which then produces viral protein.
2005

B04-F11A1 # **.. Adenovirus**
Includes adeno-associated virus.
2007

B04-F11B # **. RNA virus general**
Virus that infects foreign RNA into host cell, where the DNA sequence is then transcribed and viral protein produced.
2005

B04-F11B1 # **.. Retrovirus**
2007

B04-F11B2 # **.. Coronavirus**
Including COVID-19.
2021

B04-F12 # **Minicells & organelles**
E.g. mitochondria and any subcellular particles, including exosomes and migrasomes.
2005

B04-F13 # **Platelets**
2010

B04-G **ANTIBODY DEFINED IN TERMS OF ANTIGEN**
E suffix is appended only when the antibody is produced by genetic methods beyond standard hybridoma technology.
1994

B04-G01 # **General and other**
Also includes general and unspecified immunoglobulins (specific immunoglobulins may be searched under the heading B04-G27)
1994
Previous code(s): B04-B04C

B04-G01A . **Chimeric antibody**
An antibody genetically engineered to contain the variable fragment from one species fused to the constant region from another species.
2005

B04-G01B # . **Human antibody**
An antibody produced from a single human cell line.
2005

B04-G01C . **Humanised antibody**
An antibody from a single cell line genetically engineered to contain around 90% human protein, reducing the likelihood of an immune response.
2005

B04-G01D # . **Murine antibody**
An antibody produced from a single mouse cell line.
2005

B04-G02 # **Antimodifier of cell function and growth, antihormone antibody**
1994
Previous code(s): B04-B04C6

B04-G03 # **Antienzyme antibody**
1994
Previous code(s): B04-B04C6

B04-G04 # **Antireceptor antibody**
1994
Previous code(s): B04-B04C6

B04-G05 # **Anticancer cell antibody**
1994
Previous code(s): B04-B04C4

B04-G06 # **Antiblood cells antibody**
e.g. antibody to T-cell, B-cell.
1994
Previous code(s): B04-B04C6

B04-G07 # **Antibacteria antibody**
1994
Previous code(s): B04-B04C3

B04-G08 # **Antivirus antibody**
1994
Previous code(s): B04-B04C3

B04-G09 # **Antimicroorganisms (other) antibody**
1994
Previous code(s): B04-B04C3

B04-G09A # . **Antifungus antibody**
2008

B04-G09B # . **Antiprotozoal antibody**
2008

B04-G10 # **Antiplant antibody**
1994
Previous code(s): B04-B04C6

B04-G11 # **Antibody binding to another antibody**
Also includes anti-idiotypic antibody.
2006

B04-G12 # **Antiparasitic antibody**
Antibody acting against parasitic organisms/any kind of parasites other than bacteria, virus, fungi, protozoa.
2011

B04-G20 # **Catalytic antibodies**
Including abzyme. This code defines antibodies other than in terms of their antigen and may be applied in conjunction with another B04-G code.
1994
Previous code(s): B04-B04C6

B04-G21 # **Monoclonal antibody**
This code defines antibodies other than in terms of their antigen and may be applied in conjunction with another B04-G code.
1994
Previous code(s): B04-B04C5

B04-G22 # **Polyclonal antibodies**
This code defines antibodies other than in terms of their antigen and can be applied in conjunction with another B04-G code.
1994
Previous code(s): B04-B04C6

B04-G23 # **Antibody fragments**
2006

B04-G24 # **Bispecific antibodies**
2006

B04-G25 # **Anti-prion protein antibody**
2008

B04-G26 # **Heterospecific antibody**
An individual antibody which can bind more than one antigen due to the presence of two or more different binding sites. May be searched in conjunction with additional codes from B04-G.
2016

B04-G27 **Immunoglobulins (specific)**
Only specific immunoglobulins are covered within this coding section. General and unspecified immunoglobulins should be searched using B04-G01.
2016

B04-G27A # **. Immunoglobulin A**
May be searched in conjunction with additional codes from B04-G.
2016

B04-G27D # **. Immunoglobulin D**
May be searched in conjunction with additional codes from B04-G.
2016

B04-G27E # **. Immunoglobulin E**
May be searched in conjunction with additional codes from B04-G.
2016

B04-G27G # **. Immunoglobulin G**
May be searched in conjunction with additional codes from B04-G.
2016

B04-G27M # **. Immunoglobulin M**
May be searched in conjunction with additional codes from B04-G.
2016

B04-G27X # **. Immunoglobulin X**
May be searched in conjunction with additional codes from B04-G. Not coded when X is stated in the document to represent an undefined or general immunoglobulin.
2024

B04-G27W # **. Immunoglobulin W**
Found in sharks and skates; related to mammalian IgD. May be searched in conjunction with additional codes from B04-G.
2021

B04-G27Y # **. Immunoglobulin Y**
May be searched in conjunction with additional codes from B04-G.
2020

B04-H **MODIFIERS OF CELL FUNCTION AND GROWTH**
The term "modifier of cell function and growth" includes biological response modifiers (immune system mediators) such as prostaglandins, cytokines, monokines, interleukins, lymphokines (a subset of interleukins), CSFs, interferons, the growth factors, somatomedins and blood factors. All of these are proteins except for prostaglandins. The E suffix is appended to codes for molecules produced by exogenous gene expression in host cells as well as derivatives modified at the genetic level.
1994

B04-H01 # **Modifier of cell function and growth general and other**
This code is applied when either a generic term such as cytokine, is used or when a specific substance does not fit into any category covered by B04-H02 to B04-H20B. It also includes blood factors general and other.
1994
Previous code(s): B02-V03, B04-B02C, B04-B02E, B04-B04A, B04-B04D, B04-C01

B04-H02 # **Interleukins general and other**
1994
Previous code(s): B04-C01G

B04-H02A # **. Interleukin 1**
1994
Previous code(s): B04-C01G

B04-H02B # **. Interleukin 2**
1994
Previous code(s): B04-C01G

B04-H02C # **. Interleukin 3 (Multi-CSF)**
1994
Previous code(s): B04-C01G

B04-H02D # **. Interleukin 4**
1994
Previous code(s): B04-C01G

B04-H02F # **. Interleukin 5**
1994
Previous code(s): B04-C01G

B04-H02G # **. Interleukin 6**
1994
Previous code(s): B04-C01G

B04-H02H # **. Interleukin 7**
1994
Previous code(s): B04-C01G

B04-H02J # **. Interleukin 8 (NAP "Neutrophil Activating Protein")**
1994
Previous code(s): B04-C01G, B04-B04A

B04-H02K # **. Interleukin 9**
1994
Previous code(s): B04-C01G

B04-H02L # **. Interleukin 10**
1994
Previous code(s): B04-C01G

B04-H02M # **. Interleukin 11**
1994
Previous code(s): B04-C01G

B04-H02N # . **Interleukin 12**
1994
Previous code(s): B04-C01G

B04-H02P # . **Interleukin 13**
1994
Previous code(s): B04-C01G

B04-H02Q # . **Interleukins 14-20**
2006
Previous code(s); B04-H02

B04-H02R # . **Interleukins 21-25**
2006
Previous code(s): B04-H02

B04-H02S # . **Interleukins 26-30**
2006
Previous code(s): B04-H02

B04-H02T # . **Interleukins 31-35**
2006
Previous code(s): B04-H02

B04-H03 **Prostaglandins general and other**
Includes all modified prostaglandins not covered more specifically in subcodes.
1994
Previous code(s): B04-B02E

B04-H03A . **Prostaglandin E1**
1994
Previous code(s): B04-B02E

B04-H03B . **Prostaglandin E2**
1994
Previous code(s): B04-B02E

B04-H03C . **Prostaglandin F2 alpha**
1994
Previous code(s): B04-B02E

B04-H03D . **Prostacyclin (Prostaglandin I2)**
1994
Previous code(s): B04-B02E,B06-A02

B04-H03F . **Leukotrienes**
1994
Previous code(s): B04-B02E, B07-A03, B10-B02D, B10-C04D

B04-H03G . **Thromboxanes**
1994
Previous code(s): B04-B02E, B06-A02, B07-A02

B04-H04 # **CSFs (Colony Stimulating Factors) General and other**
1994
Previous code(s): B04-B04J

B04-H04A # . **G-CSF (Granulocyte Colony Stimulating Factor)**
1994
Previous code(s): B04-B04J

B04-H04B # . **M-CSF (Macrophage Colony Stimulating Factor)**
1994
Previous code(s): B04-B04J

B04-H04C # . **GM-CSF (Granulocyte Macrophage Colony Stimulating Factor)**
1994
Previous code(s): B04-B04J

B04-H04D # . **MEG-CSF (Megakaryocyte Colony Stimulating Factor)**
1994
Previous code(s): B04-B04J

B04-H05 # **Interferons general and other**
1994
Previous code(s): B02-V03

B04-H05A # . **Interferon alpha**
1994
Previous code(s): B02-V03

B04-H05B # . **Interferon beta**
1994
Previous code(s): B02-V03

B04-H05C # . **Interferon gamma**
1994
Previous code(s): B02-V03

B04-H05D # . **Interferon delta**
2024
Previous code(s): B02-V03

B04-H05K # . **Interferon kappa**
2024
Previous code(s): B02-V03

B04-H06 # **Growth factors general and other**
1994
Previous code(s): B04-B04J

B04-H06A # . **EGF (Epidermal Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06B # . **PDGF (Platelet Derived Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06C # . **MDGF (Macrophage Derived Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06D # . **NGF (Nerve Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06F # . **TGF (Transforming Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06G # . **FGF (Fibroblast Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06H # . **Somatomedins, sulfation factors**
This code includes IGF's (insulin-like growth factors).
1994
Previous code(s): B04-B04J

B04-H06J # **. PGF (Prostatic Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06K # **. HGF (Hepatocyte Growth Factor)**
1994
Previous code(s): B04-B04J

B04-H06L # **. Bone morphogenetic protein**
2002

B04-H06M # **. Vascular endothelial growth factor**
Also known as VEGF.
2006
Previous code(s): B04-H06

B04-H07 # **Erythropoietin (Epo), thrombopoietin**
1994, 2010
Previous code(s): B04-B04A6, B04-B02D, thrombopoietin B04-H06 (pre-2010)

B04-H08 # **TNF (Tumour Necrosis Factor)**
1994
Previous code(s): B04-B04J

B04-H09 # **LIF (Leukemia Inhibitory Factor)**
1994
Previous code(s): B04-B04J

B04-H10 # **MIS (Mullerian inhibitory substance)**
1994
Previous code(s): B04-B04J

B04-H11 # **MIP (Macrophage inflammatory protein)**
1994
Previous code(s): B04-B04A6

B04-H12 # **Megakaryocyte potentiator**
1994
Previous code(s): B04-B04A6, B04-B04J

B04-H13 # **Lymphotoxin (LT)**
1994
Previous code(s): B04-B04A6, B04-B04D3, B04-B04J

B04-H14 # **PAF (Platelet activating factor)**
1994
Previous code(s): B04-B04D3, B04-B04J

B04-H15 # **PA (Plasminogen Activator)**
1994
Previous code(s): B04-B02C3, B04-B04D3

B04-H16 # **SCF (Stem Cell Factor)**
1994
Previous code(s): B04-B04J

B04-H17 # **T-Activin (TA, Thymic factor)**
1994
Previous code(s): B04-B04A6, B04-B04JB04-H18 # Activin A (EDF, Erythroid differentiation factor)
1994
Previous code(s): B04-B04A6, B04-B04J

B04-H18 # **Activin A (EDF, Erythroid differentiation factor)**
1994
Previous code(s): B04-B04A6, B04-B04J

B04-H19 # **Clotting factors**
Including: thrombin (fibrinogenase, thrombase), prothrombin (thrombinogen, Factor II), fibrin, fibrinogen (Factor I), Factor III (tissue thromboplastin, tissue factor), Factor V (proaccelerin, accelerator globulin (AcG), labile factor), Factor VII (proconvertin, thrombokinase, autoprothrombin I, serum prothrombin conversion accelerator (SPCA), stable factor), Factor VIII (antihemophilic globulin (AHG), antihemophilic factor A), Factor IX (plasma thromboplastin component (PTC), autoprothrombin II, Christmas factor, antihemophilic factor B), Factor X (Stuart factor, autoprothrombin C, Prower factor, Stuart-Prower factor, thrombokinase), Factor XI (plasma thromboplastin antecendent (PTA), antihemophilic factor C), Factor XII (Hageman factor, glass contact, activation factor), Factor XIII (fibrin stabilising factor (FSF), fibrinase, Laki-Lorand factor (LLF), transglutaminase) and the platelet factors 1, 2, 3 & 4 etc. N.B. Factor IV, which is calcium, is coded B05-A01B. The clot-dissolving proteolytic enzyme plasmin (fibrinolysin) and plasminogen are coded B04-L05C.
1994
Previous code(s): B04-B02C3, B04-B02D2, B04-B04D3, B04-C02B3

B04-H20 # **Adhesion and motor molecules general and other**
e.g. LFA (lymphocyte function associated antigen), ICAM/VCAM (intercellular/vascular adhesion molecule).
1994
Previous code(s): B04-B04A6, B04-B04C2

B04-H20A # . **Fibronectin**
1994
Previous code(s): B04-B04A6

B04-H20B # . **Vitronectin**
1994
Previous code(s): B04-B04A6

B04-H20C # . **Muscle proteins general**
2002

B04-H20C1 # .. **Actin**
2002

B04-H20C2 # .. **Myosin**
2002

B04-H20C3 # .. **Tropomyosin**
2002

B04-H21 # **Integrins**
2002

B04-J **HORMONES**
1994

B04-J01 # **Hormones general and other**
Hormones which are not covered by the B04-J03, B04-J04 and B04-J05 general sub-headings; and are not represented in B04-J06 to B04-J18 are coded here. e.g. generic terms such as hypothalamic, adrenergic, neuropeptide, gastrointestinal and insect hormones.
1994
Previous code(s): B04-B02D

B04-J02 **Steroidal hormones (no structure)**
Includes all steroids where no structure is given.
1994
Previous code(s): B04-B02D1

B04-J03 # **Pancreatic hormone general and other**
Including pancreatic polypeptide.
1994
Previous code(s): B04-B02D2

B04-J03A # . **Insulin**
1994
Previous code(s): B04-B02D2

B04-J03B # . **Glucagon**
1994
Previous code(s): B04-B02D2

B04-J04 # **Thyroid and parathyroid general and other**
N.B. thyroxine is coded B10-B02E.
1994
Previous code(s): B04-B02D3

B04-J04A # . **Calcitonin**
1994
Previous code(s): B04-B02D3

B04-J04B # . **Parathyroid hormone**
1994
Previous code(s): B04-B02D3

B04-J05 # **Pituitary gland hormones general and other**
Including prolactin and human growth hormone.
1994
Previous code(s): B04-B02D4

B04-J05A # . **Oxytocin**
1994
Previous code(s): B04-B02D4

B04-J05B # . **ADH (Antidiuretic hormone)**
Also known as vasopressin.
1994
Previous code(s): B04-B02D4

B04-J05D # . **ACTH (Adrenocorticotropic hormone, "adrenocorticotropin")**
1994
Previous code(s): B04-B02D4

B04-J05F # . **TSH (Thyroid Stimulating Hormone)**
1994
Previous code(s): B04-B02D4

B04-J05G # . **MSH (Melanocyte stimulating hormone)**
1994
Previous code(s): B04-B02D4

B04-J05H # . **Gonadotropins**
Including FSH (follicle stimulating hormone), LH (luteinising hormone) and HMG (human menopausal gonadotropin).
1994
Previous code(s): B04-B02D4

B04-J05J # . **STH (Somatotropic growth hormone)**
1994
Previous code(s): B04-B02D4

B04-J06 # **CRH (Corticotropin-releasing hormone)**
Hormones covered by B04-J06 to B04-J18 are specific and other than steroidal, pancreatic, thyroid, parathyroid, and pituitary gland hormones.
1994
Previous code(s): B04-B02D

B04-J07 # **GN-RH (Gonadotropin-releasing hormone), LH-RH (Luteinising hormone-releasing hormone)**
1994
Previous code(s): B04-B02D

B04-J08 # **TRH (Thyrotropin-releasing hormone)**
1994
Previous code(s): B04-B02D

B04-J09 # **GH-RH, GH-RF, SRF (Growth hormone-releasing hormone/factor, somatotropin-releasing factor)**
1994
Previous code(s): B04-B02D

B04-J10 # **Somatostatin**
1994
Previous code(s): B04-B02D

B04-J11 # **Endorphins/enkephalins**
1994
Previous code(s): B04-B02D

B04-J12 # **Gastrin/Secretin/Motilin**
1994
Previous code(s): B04-B02D

B04-J13 # **Cholecystokinin (CCK-PZ, Pancreozymin)**
1994
Previous code(s): B04-B02D

B04-J14 # **Tachykinins (Substance P, SP)**
1994
Previous code(s): B04-B02D

B04-J15 # **Neurotensin**
1994
Previous code(s): B04-B02D

B04-J16 # **Ecdysone**
1994
Previous code(s): B04-B02D

B04-J17 # **Juvenile hormone**
1994
Previous code(s): B04-B02D

B04-J18 # **Angiotensin**
1994
Previous code(s): B04-B02D

B04-J19 # **Melanin concentrating hormone**
Also known as MCH, a 19 amino acid cyclic neuropeptide expressed mainly in the hypothalamus.
2005
Previous code(s): B04-B02D, B04-J01

B04-J99 # **Prohormone**
e.g. progastrin, procalcitonin. To be coded in conjunction with the active form of the appropriate hormone.
2018

B04-K **RECEPTORS**
1994

B04-K01 # **Receptor general and other**
Including orphan G-protein coupled receptors. CD4: (1) is coded here when described simply as a receptor, (2) is coded B04-K01U when described as a viral receptor.
1994
Previous code(s): B04-B04A6

B04-K01A # **. Parasympathetic receptor (cholinergic receptor)**
1994
Previous code(s): B04-B04A6

B04-K01B # **. Sympathetic receptor (adrenergic receptor, alpha and beta)**
1994
Previous code(s): B04-B04A6

B04-K01C # **. Dopamine receptor**
1994
Previous code(s): B04-B04A6

B04-K01D # **. Serotonin (5-HT) receptor**
1994
Previous code(s): B04-B04A6

B04-K01F # **. Histamine receptor**
1994
Previous code(s): B04-B04A6

B04-K01G # **. Interleukin receptor**
1994
Previous code(s): B04-B04A6

B04-K01H # **. Prostaglandin/leukotriene/thromboxane receptor**
1994
Previous code(s): B04-B04A6

B04-K01J # **. Growth factor receptor**
1994
Previous code(s): B04-B04A6

B04-K01K # **. Other modifier of cell function and growth receptor**
1994
Previous code(s): B04-B04A6

B04-K01L # **. Steroid receptor**
e.g. mineralocorticoid, corticosteroid, estrogen receptor.
1994
Previous code(s): B04-B04A6

B04-K01L1 # **.. Androgen receptors**
2005

B04-K01L2 # **.. Estrogen receptors**
2005

B04-K01L3 # **.. Corticosteroid receptors**
2005

B04-K01L4 # **.. Other steroid receptors**
2005

B04-K01M # **. Insulin receptor**
1994
Previous code(s): B04-B04A6

B04-K01N # **. Angiotensin receptor**
1994
Previous code(s): B04-B04A6

B04-K01P # **. Other hormone receptor**
1994
Previous code(s): B04-B04A6

B04-K01Q # **. Lipoprotein (LDL, HDL) receptor**
1994
Previous code(s): B04-B04A6

B04-K01R # **. Blood cell or blood cell antigen receptor**
1994
Previous code(s): B04-B04A6

B04-K01S # **. Cancer cell or cancer cell antigen receptor**
1994
Previous code(s): B04-B04A6

B04-K01T # **. Bacterial or bacterial antigen receptor**
1994
Previous code(s): B04-B04A6

B04-K01U # **. Viral or viral antigen receptor**
1994
Previous code(s): B04-B04A6

B04-K01V # **. Other cell, microbe or antigen receptor**
1994
Previous code(s): B04-B04A6

B04-K01W # **. Antibody receptor**
1994
Previous code(s): B04-B04A6

B04-K01X # **. Non-steroidal nuclear (hormone) receptor**
2002

B04-K01X1 # **.. Peroxisome proliferator activated receptor (orphan receptor)**
Also known as PPAR.
2005

B04-K01X2 # **.. Thyroid receptor**
2005

B04-K01Y # **. G-protein coupled receptor**
2002

B04-K01Y1 # **.. Melanin concentrating hormone receptor**
2005

B04-K01Z # **. Enzyme receptor**
2014

B04-L **ENZYMES**
Enzyme nomenclature is based whenever possible on the classification defined by the Commission on Biochemical Nomenclature.
1994

B04-L01 # **Enzymes, catalytic proteins general and other**
1994
Previous code(s): B04-B02C

B04-L02 # **Coenzymes**
1994
Previous code(s): B04-B02C1

B04-L03 # **Oxidoreductases general and other**
1994
Previous code(s): B04-B02C2

B04-L03A # **. Oxidases**
1994
Previous code(s): B04-B02C2

B04-L03B # **. Peroxidases**
1994
Previous code(s): B04-B02C2

B04-L03C # **. Oxygenases**
Including cytochrome P450.
1994
Previous code(s): B04-B02C2

B04-L03D # **. Dehydrogenases, reductases**
1994
Previous code(s): B04-B02C2

B04-L03E # **. Lipoxygenases**
2002

B04-L04 # **Transferases general and other**
1994
Previous code(s): B04-B02C4

B04-L04A # **. DNA/RNA polymerases**
1994
Previous code(s): B04-B02C4

B04-L04B # **. Reverse transcriptase**
1994
Previous code(s): B04-B02C4

B04-L04C # **. Kinases**
Any of several enzymes that catalyse the transfer of a phosphate group from ATP to a second substrate.
2005
Previous code(s): B04-L04

B04-L05 # **Hydrolases general and other**
Including beta-lactamases.
1994
Previous code(s): B04-B02C3

B04-L05A # **. Esterases**
Including lipases, nucleases, restriction enzymes, sulfatases, phosphatases.
1994
Previous code(s): B04-B02C3

B04-L05A1 # **.. Phosphodiesterases**
2005

B04-L05A2 # **.. CRISPR system nucleases**
Nucleases specifically for application in CRISPR systems e.g. Cas9 and Cpf1.
2017

B04-L05B # **. Glycosidases**
Including amylases, cellulases, lactases.
1994
Previous code(s): B04-B02C3

B04-L05C # **. Proteases, peptide hydrolases**
Including chymotrypsin, trypsin, papain, fibrinolysin, collagenases, elastases.
1994
Previous code(s): B04-B02C3

B04-L05C1 # **.. Metalloproteases**
2005

B04-L06 # **Lyases**
Including adenyl cyclases, (de)carboxylases, aldolases, dehydratases.
1994
Previous code(s): B04-B02C5

B04-L07 # **Isomerases**
Including racemases, tautomerases, epimerases, mutases.
1994
Previous code(s): B04-B02C6

B04-L08 # **Ligases**
Including synthetases, some carboxylases, aromatase. Excludes synthase.
1994
Previous code(s): B04-B02C7

B04-L09 # **Zymogen and other enzyme precursors**
2002

B04-L10 # **Translocases**
Enzymes in class EC7.
2020

B04-M **ENZYME INHIBITORS**
1994

B04-M01 # **Enzyme inhibitors general and other**
This code is used for enzyme inhibitors with no structure only.
1994
Previous code(s): B04-B04F

B04-N **OTHER PROTEIN/POLYPEPTIDE**
This code is used only when a substance is not better defined in preceding sections, e.g. a protein with adenyl cyclase activity is coded B04-L06 only.
1994

B04-N01 # **Plant protein/polypeptide (No sequence)**
1994
Previous code(s): B04-B04A4,B04-C01

B04-N01A # **. Complete amino acid sequence given**
Codes B04-C01 to B04-C01G are also applied.
1994
Previous code(s): B04-B04A4

B04-N01B # **. Fragments of amino acid sequence given**
1994
Previous code(s): B04-B04A4

B04-N02 # **Animal protein/polypeptide (No sequence)**
1994
Previous code(s): B04-B04A6,B04-C01

B04-N02A # **. Complete amino acid sequence given**
Codes B04-C01 to B04-C01G are also applied.
1994
Previous code(s): B04-B04A6

B04-N02B # **. Fragments of amino acid sequence given**
1994
Previous code(s): B04-B04A6

B04-N03 # **Microorganism protein/polypeptide (No sequence)**
1994
Previous code(s): B04-B04A5,B04-C01

B04-N03A # **. Complete amino acid sequence given**
Codes B04-C01 to B04-C01G are also applied.
1994
Previous code(s): B04-B04A5

B04-N03B # **. Fragments of amino acid sequence given**
1994
Previous code(s): B04-B04A5

B04-N03C # **. Bacterial protein/polypeptide with complete amino acid sequence**
Codes B04-C01 to B04-C01G are also applied.
2006-2010
Now coded B04-N03J1

B04-N03D # **. Bacterial protein/polypeptide with fragments of amino acid sequence**
2006-2010
Now coded B04-N03J2

B04-N03E # **. Viral protein/polypeptide with complete amino acid sequence**
Codes B04-C01 to B04-C01G are also applied.
2006-2010
Now coded B04-N03K1

B04-N03F # **. Viral protein/polypeptide with fragments of amino acid sequence**
2006-2010
Now coded B04-N03K2

B04-N03G # **. Fungal protein/polypeptide with complete amino acid sequence**
Codes B04-C01 to B04-C01G are also applied.
2006-2010
Now coded B04-N03L1

B04-N03H # **. Fungal protein/polypeptide with fragments of amino acid sequence**
2006-2010
Now coded B04-N03L2

B04-N03J # **. Bacterial protein/polypeptide (No sequence)**
2011

B04-N03J1 # **.. Bacterial protein/polypeptide with complete aminoacid sequence**
2011
Previous code(s): B04-N03C

B04-N03J2 # **.. Bacterial protein/polypeptide with fragments of aminoacid sequence**
2011
Previous code(s): B04-N03D

B04-N03K # **. Viral protein/polypeptide (No sequence)**
2011

B04-N03K1 # **.. Viral protein/polypeptide with complete aminoacid sequence**
2011
Previous code(s): B04-N03E

B04-N03K2 # **.. Viral protein/polypeptide with fragments of aminoacid sequence**
2011
Previous code(s): B04-N03F

B04-N03L # **. Fungal protein/polypeptide (No sequence)**
2011

B04-N03L1 # **.. Fungal protein/polypeptide with complete aminoacid sequence**
2011
Previous code(s): B04-N03G

B04-N03L2 # **.. Fungal protein/polypeptide with fragments of aminoacid sequence**
2011
Previous code(s): B04-N03H

B04-N04 # **Protein/polypeptide of undefined origin (No sequence)**
1994
Previous code(s): B04-B04A,B04-C01

B04-N04A # **. Complete amino acid sequence given**
Codes B04-C01 to B04-C01G are also applied.
1994
Previous code(s): B04-B04A

B04-N04B # **. Fragments of amino acid sequence given**
1994
Previous code(s): B04-B04A

B04-N05 # **Lipoprotein**
Also includes lipopeptides.
1994
Previous code(s): B04-B04A,B04-B01B

B04-N06 # **Glycoprotein, peptidoglycan and cytoskeletal proteins**
1994
Previous code(s): B04-B04A

B04-N07 # **Ion channel protein**
2002

B04-N08 **Fusion protein**
2002

B04-N09 # **Molecular chaperones and chaperonins**
E.g. heat shock proteins (HSP).
2005
Previous code(s): B04-N01, B04-N02, B04-N04

B04-N10 **Prions**
Protein pathogen responsible for e.g. Creutzfeldt-Jakob disease and kuru in humans and scrapie in sheep.
2005
Previous code: B04-N02

B04-N11 # **Zinc finger proteins**
Specialized proteins that contain a bound zinc ion or are capable of binding a zinc ion, and are associated with DNA binding proteins.
2005
Previous code(s): B04-N01, B04-N02, B04-N03, B04-N04

B04-N12 # **Transcription factors general**
A protein that binds DNA at a specific promoter or enhancer region where it activates and regulates transcription.
2005
Previous code(s): B04-N01, B04-N02, B04-N03, B04-N04

B04-N13 # **Signalling pathway proteins**
2006

B04-N14 **Peptidomimetics**
2008

B04-N15 **Crystalline form**
Used in conjunction with other specific protein codes for protein crystals.
2010

B04-N16 **Biomarker protein**
Applied with one or more other codes from section B04 which describe the type of biomarker protein e.g. EGFR used as a biomarker for colorectal cancer would be coded with B04-K01J and B04-N16.
2017

B04-P **WHOLE ANIMALS**
E suffix is appended to respective whole animal codes for transgenic animals.
1994

B04-P01 # **Whole animals general and other**
1994
Previous code(s): B04-B04L,B04-B04M

B04-P01A # **. Laboratory experimental animals**
e.g. mice, rats.
1994
Previous code(s): B04-B04L, B04-B04M

B04-P01B # **. Farm animals**
e.g. cows, sheep.
1994
Previous code(s): B04-B04L, B04-B04M

B04-P01C # **. Arthropods**
1994
Previous code(s): B04-B04M

B04-Q **DRUG CONJUGATES GENERAL**
All portions of the conjugate are additionally coded in the relevant sections.
2013

B04-Q01 **Antibody-drug conjugates**
The antibody is additionally coded in section B04-G.
2013

B04-Q02 **Other protein/peptide drug conjugates**
The protein / peptide is also coded in the appropriate section(s) of B04.
2013

B04-Q03 **Synthetic polymer-drug conjugates**
Also includes drug conjugates with polysaccharides. The polymer/ polysaccharide is additionally coded in B04.
2013

B04-Q04 **Nucleic acid-drug conjugates**
Applied when both subcodes would be used or when the nucleic acid portion is ambiguously defined. The nucleic acid is additionally coded in section B04-B03 and/or B04-E.
2017

B04-Q04A **. Oligonucleotide-drug conjugates**
The oligonucleotide is additionally coded in section B04-B03.
2025

B04-Q04B **. Polynucleotide-drug conjugates**
The polynucleotide is additionally coded in section B04-E.
2025

B04-Q05 **Proteolysis targeting chimera**
Protac(RTM). To be searched alongside the relevant Section B chemical structure codes.
2025

B04-R **BIOSIMILARS**
Includes biobetters. Search in conjunction with relevant B-code(s) for the biosimilar product. Applicable only for explicitly claimed biosimilars.
2016

B05 MISCELLANEOUS

This section covers all inorganic compounds, and also all organic compounds containing elements other than H, C, N, O, S and halogens (other than the exceptions given in the notes). The order of priorities for this group is generally B01A-B02C >> A01A >> A01B >> C01-C08 (e.g. sodium phosphate is only coded as B05-B02A3). The exception to the above is when the anion (of the lower priority) of a metal salt is an important factor in the invention, e.g. effervescent compositions containing sodium bicarbonate are coded B05-C04 and not B05-A01B. Fullerenes and metallocenes are not within the above hierarchy. Sub-group A elements (i.e. metals) when used as salts of organic compounds, are only coded in B05 if the metal is an essential limiting factor of the invention. Otherwise the compound is coded under the parent compound (i.e. acid, alcohol, etc.).

B05-A **METALS AND COMPOUNDS**

B05-A01 **Group 1, 2, 3 general**
retired subheading, may not be applied in B
1963-1965

B05-A01A **. Potassium**
This code is not used for organic compounds unless potassium is an essential pharmaceutically active limiting factor of the invention (e.g. K salts used for treating hypokalemia).
1965

B05-A01B **. Group 1a, 2a, 3a excluding K, B, Ra**
This code is not used for organic compounds unless the metal is an essential pharmaceutically active limiting factor of the invention.
1965

B05-A02 **Group 4a, 5a excluding C, Si, N, P, As**

B05-A03 **Transition metals, lanthanides and actinides general**
The generic code B05-A03 is only used for general disclosures which would otherwise require several specific codes. Thus when a specific code is searched the corresponding generic code must also be searched.

B05-A03A **. Manganese (Mn), iron (Fe), copper (Cu), zinc (Zn), mercury (Hg)**
1975

B05-A03A1 **.. Manganese (Mn) compounds**
2005

B05-A03A2 **.. Iron (Fe) compounds**
2005

B05-A03A3 **.. Copper (Cu) compounds**
2005

B05-A03A4 **.. Zinc (Zn) compounds**
2005

B05-A03A5 **.. Mercury (Hg) compounds**
2005

B05-A03B **. Other transition metals, lanthanides - metals and compounds**
1975

B05-A03B1 **.. Titanium (Ti)**
2008

B05-A03B2 **.. Silver (Ag)**
2008

B05-A03B3 **.. Platinum (Pt)**
2008
Previous code(s): B05-A03B

B05-A04 **Radioactive elements and specific isotopes**

B05-A04A **. Deuterium**
2007

B05-A04B **. Tritium**
2007

B05-A04C **. Carbon isotopes**
Excludes Carbon-12
2007

B05-A04D **. Iodine isotopes**
Excludes Iodine-127
2007

B05-A04E **. Other radioactive isotope**
2007

B05-A04F **. Other non-radioactive isotope**
2007

B05-A05 **Alloys**
May be coded in conjunction with additional codes from B05-A when the constituent metals are known.
2018

B05-A06 **Metal chelates**
Both the metal and the chelating agent(s) are also coded.
2019

B05-B **LESS COMMON NON-METALS AND COMPOUNDS**

B05-B01 **Boron(B), silicon (Si), arsenic (As), selenium (Se), phosphorus (P) organic general**
1963-1965

B05-B01A **. Boron (B) organic**
1965

B05-B01B . **Silicon (Si) organic**
1965

B05-B01C . **Arsenic (As) organic**
1965

B05-B01D . **Selenium (Se), Tellurium (Te), organic**
1965

B05-B01E . **P-C bond heterocyclic**
1965

B05-B01F . **P-C bond aromatic**
1965

B05-B01G . **P-C bond (cyclo)aliphatic**
1965

B05-B01H . **P-Hal bond organic**
1965

B05-B01J . **P-N bond heterocyclic**
1965

B05-B01K . **P-N bond aromatic**
1965

B05-B01L . **P-N bond (cyclo)aliphatic**
1965

B05-B01M . **P-O(S) bond heterocyclic**
1965

B05-B01N . **P-O(S) bond aromatic**
1965

B05-B01P . **P-O(S) bond (cyclo)aliphatic**
1965

B05-B02 **B, Si, As, Se, P inorganic, inert gases**
1963-1965

B05-B02A . **P and inorganic P compounds general**
The generic code B05-B02A is only used for general disclosures which would otherwise require several specific codes. Thus when a specific code is searched the corresponding generic code must also be searched.
1965

B05-B02A1 .. **P acids production**
1975

B05-B02A2 .. **Ammonium salts of P acids**
This code is used also for mixtures containing only ammonium salts of P acids.
1975

B05-B02A3 .. **P and inorganic P compounds**
1975

B05-B02B . **Arsenic (As) inorganic**
1965

B05-B02C . **Silicon (Si), selenium (Se), tellurium (Te), boron (B) inorganic, inert gases**
1965

B05-C **MORE COMMON NON-METALS, COMPOUNDS**

B05-C **General**

B05-C01 **N (ammonia) inorganic**
After CPI Week 7501 ammonium salts of phosphorus acids have been coded B05-B02A2.
1965

B05-C02 **N (nitrate) inorganic**
1965

B05-C03 **N (others) inorganic**
1965

B05-C04 **CO2, inorganic (bi)(thio)carbonates**
1965

B05-C05 **Inorganic S acids, S oxides**
1965

B05-C06 **Elemental C or S**
1965

B05-C07 **Inorganic compounds containing halogen**
This code is not used for organic compounds unless a halogen is a member of a heterocyclic ring, or forms a part of an anion, and is an essential pharmaceutically active limiting factor of the invention (e.g. HF salts of amines used as dental agents).
1965

B05-C08 **Other common non-metals, compounds**
1965

B05-U **FULLERENE TYPE CAGE STRUCTURES**
1994

B05-U **General**
1994

B05-U01 **Other than carbon only**
1994

B05-U02 **Carbon only**
1994

B05-U03 **Carbon only nanotubes**
2005

B05-U04 **Carbon plus heteroatom nanotubes**
2005

B05-U05 **Other carbon containing 3-D structures**
2005

B05-U05A . **Nanotubes, nanorods, nanohorns**
2010

B05-U05B . **Nanofilms**
2010

B05-U05C	**. Nanostructures other than those covered by B05-U05A and B05-U05B** **2010**
B05-U06	**Inorganic nanostructures** **2005**
B05-V	**METALLOCENES** **2008**
B05-V	**Metallocenes** e.g. ferrocenes, titanocenes, zirconocenes **2008** *Previous code(s): B05+*
B05-Z	**ORGANOMETALS** **2015**
B05-Z	**Organometal compounds** Metals/metalloids present in organic compound, excludes B, Si, As, Se, Te and P. To be searched alongside specific codes for relevant metal(s). **2015**

B06 HETEROCYCLIC FUSED RING

This section is used for fused heterocyclic rings containing C and any of O, S and N. If any other elements are present, the structure is coded in B05. The specific rings listed in this section include all reduced derivatives and tautomers, unless specifically excluded.

Specific ring systems present in a disclosed and claimed compound are individually coded, but if there is an essential fused heterocyclic ring and either an optional or a variable fused heterocyclic ring, only the essential ring is coded and neither the variable ring nor B06-H. The exception to this is in a composition with a single new/used/produced compound having one essential fused heterocyclic ring and other components with various fused heterocycles - both the specific and B06-H are then coded.

B06-A	**SOLE HETERO(S) OXYGEN**
B06-A01	**1-Benzo-(furan or pyran)**
B06-A02	**Others with 2 rings** (e.g. phenolphthalein)
B06-A03	**With more than 2 rings**
B06-A03A	**. Taxols, taxels** e.g. paclitaxel, docetaxel. Must contain an oxetane ring fused to the taxane skeleton **2006, 2010**
B06-B	**SOLE HETERO(S) SULPHUR**
B06-B01	**With 2 rings**
B06-B02	**With more than 2 rings**
B06-C	**SOLE HETEROS O AND S**
B06-C	**General**
B06-D	**SOLE HETERO(S) NITROGEN**
B06-D01	**Indole**
B06-D02	**Quinoline**
B06-D03	**Isoindole, isoquinoline**
B06-D04	**Others with 2 rings and one N**
B06-D05	**With 2 rings (5+6 membered) and two N**
B06-D06	**With 2 rings (both 6 membered) and two N**
B06-D07	**Others with 2 rings and two N**
B06-D08	**With 2 rings and 3 N**
B06-D09	**With 2 rings and 4 N**

B06-D10	**With 2 rings and > 4 N**
B06-D11	**Acridine**
B06-D12	**Dibenzo[b,f]azepine**
B06-D13	**Others with 3 rings and one N**
B06-D14	**Phenazine**
B06-D15	**Carbolines, phenanthrolines**
B06-D16	**Others with 3 rings and two N**
B06-D17	**With 3 rings and > 2N**
B06-D18	**With more than 3 rings**
B06-E	**SOLE HETEROS O AND N**
B06-E01	**Benzoxazole, benzisoxazoles**
B06-E02	**Benzoxazines**
B06-E03	**Others with 2 rings**
B06-E04	**Phenoxazine**
B06-E05	**Others with more than 2 rings**
B06-F	**SOLE HETEROS S AND N**
B06-F01	**Benzothiazole, benzisothiazoles**
B06-F02	**Benzothiazines**
B06-F03	**Others with 2 rings**
B06-F04	**Phenothiazine**
B06-F05	**Others with more than 2 rings**
B06-G	**SOLE HETEROS O AND S AND N**
B06-G	**General**
B06-H	**FUSED RING, GENERAL** This code is used for general disclosures when either unspecified fused heterocyclic ring is present or several specific rings are present. Therefore when a specific code is searched, the corresponding generic code must also be searched.
B06-H	**General**
B06-S	**SPIROFUSED FUSED HETEROCYCLES** This code is to be applied in conjunction with specific ring code(s) from B06.
B06-S	**Spirofused fused heterocycles** **2011**

B07 HETEROCYCLICS, MONONUCLEAR

This section is used for monoheterocyclic rings containing C and any of O, S and N. If any other elements are present, the structure is coded in B05 only. Likewise, when a fused heterocyclic ring is present, the structure is coded in B06 only. The specific rings listed in this section include all reduced derivatives and tautomers, unless specifically excluded.

Specific ring systems present in a disclosed and claimed compound are individually coded, but if there is an essential monoheterocyclic ring and either an optional or a variable monoheterocyclic ring, only the essential ring is coded and neither the variable ring nor B07-H. The exception to this is in a composition with a single new/used/produced compound having one essential monoheterocyclic ring and other components with various monoheterocycles - both the specific and B07-H are then coded.

B07-A	**SOLE HETERO(S) OXYGEN**
B07-A01	**Furan excluding tetrahydrofuran**
B07-A02	**Tetrahydro-(furan or pyran) general**
B07-A02A	. **Tetrahydrofuran** **1994** *Previous code(s): B07-A02*
B07-A02B	. **Tetrahydropyran** **1994** *Previous code(s): B07-A02*
B07-A03	**Others with one O** Including pyran.
B07-A04	**With more than one O**
B07-B	**SOLE HETERO(S) SULPHUR**
B07-B01	**Thiophene**
B07-B02	**Others with one S**
B07-B03	**Others with more than one S**
B07-C	**SOLE HETEROS O AND S**
B07-C	**General**
B07-D	**SOLE HETERO(S) NITROGEN**
B07-D01	**With one N, 3 or 4 membered**
B07-D02	**Pyrrole** Excluding pyrrolidine.
B07-D03	**Pyrrolidine**
B07-D04	**Pyridine general** Excluding piperidine.

B07-D04A . **(Hydro)pyridinium N(V)**
1986

B07-D04B . **Pyridine (optionally substituted) production**
1986

B07-D04C . **Pyridine (optionally substituted) use**
1986

B07-D04D . **Di- and tetrahydropyridine (optionally substituted)**
1986

B07-D05 **Piperidine**

B07-D06 **With one N, > 6-membered**

B07-D07 **With > one N, < 5-membered**

B07-D08 **Pyrazole**

B07-D09 **Imidazole**

B07-D10 **Pyr(id)azine**
Excluding piperazine.

B07-D11 **Piperazine**

B07-D12 **Pyrimidine**

B07-D13 **Others with more than one N**

B07-E **SOLE HETEROS O AND N**

B07-E01 **With one O and one N < 6-membered**

B07-E02 **Oxazines**
Excluding morpholine.

B07-E03 **Morpholine**

B07-E04 **Other heterocyclics, mononuclear- sole heteros O and N**

B07-F **SOLE HETEROS S AND N**

B07-F01 **With one S and one N < 6-membered**

B07-F02 **Thiazines**

B07-F03 **Other heterocyclics, mononuclear - sole heteros S and N**

B07-G **SOLE HETEROS O AND S AND N**

B07-G **General**

B07-H **MONONUCLEAR HETEROCYCLICS GENERAL**
This code is used for general disclosure when either unspecified monoheterocyclic ring system is present in the molecule, or several rings are present. Therefore the generic code must be searched every time when a specific code is searched.

B07-H **Heterocyclic ring general**

B07-H01 **Ring linked directly to -C(=O)-, -C(=S)-, -C(=N-)- or -CN**
1975

B07-H02 **Ring linked directly to heteroatom**
1975

B07-H03 **Ring linked via aliphatic chain only to heteroatom, -C(=O)-, -C(=S)-, -C(=N)- or CN**
1975

B07-H04 **Other rings**
1975

B07-S **SPIROFUSED MONOCYCLIC HETEROCYCLES**
This code is to be applied in conjunction with specific ring code(s) from B07.

B07-S **Spirofused fused heterocycles**
2011

B08 AROMATICS, POLYCARBOCYCLIC

This section covers compounds containing more than two carbocyclic rings fused together, at least one of which is 6- membered with 3 conjugated double bonds (or quinone derivatives thereof). Mono- and bicyclo-aromatics are coded in B10.

B08-A	**At least 6 rings fused**
B08-B	**Five rings fused**
B08-C	**4 RINGS FUSED**
B08-C01	**6:6:6:6 carbon atoms per ring**
B08-C02	**Other aromatics, polycarbocyclic - 4 rings fused**
B08-D	**3 RINGS FUSED**
B08-D01	**6:6:7 carbon atoms per ring**
B08-D02	**6:6:6 carbon atoms per ring**
B08-D03	**Other aromatics, polycarbocyclic - 3 rings fused**
B08-H	**FUSED AROMATIC SYSTEM GENERAL** **2002**
B08-S	**SPIROFUSED POLYCYCLIC AROMATIC RINGS** This code is to be applied in conjunction with specific ring code(s) from B08.
B08-S	**Spirofused polycyclic aromatic rings** **2011**

B09 ALICYCLICS, POLYCARBOCYCLIC

This section covers compounds containing more than two carbocyclic rings fused together, other than aromatics (see B08). Mono- and bicyclic compounds are coded in B10.

B09-A	**At least 6 rings fused**
B09-B	**Five rings fused**
B09-C	**4 RINGS FUSED**
B09-C01	**6:6:6:6 carbon atoms per ring**
B09-C02	**Other alicyclics, polycarbocyclic - 4 rings fused**
B09-D	**3 RINGS FUSED**
B09-D01	**6:6:6 carbon atoms per ring**
B09-D02	**Other alicyclics, polycarbocyclic - 3 rings fused**
B09-H	**FUSED ALICYCLIC SYSTEM GENERAL** **2002**
B09-S	**SPIROFUSED POLYCYCLIC ALICYCLIC RINGS** This code is to be applied in conjunction with specific ring code(s) from B09.
B09-S	**Spirofused polycyclic alicyclic rings** **2011**

B10 AROMATICS AND CYCLOALIPHATICS (MONO AND BICYCLIC ONLY), ALIPHATICS

In this section compounds are coded according to the type of functional group present. Only one code is assigned to a specific compound according to the rule of priorities: A > B > C, and 1 > 2 > 3 etc. Thus B10-A01 is the highest, and B10-J02 the lowest priority code. For acidic or basic salts see the parent compounds (i.e. amines, acids, etc.). For all cyclic derivatives of the groups listed in section B10 see B01 to B07. For groups not listed in section B10, e.g. semicarbazone, the highest priority segment is coded, in this case as B10-A13D.

B10-A **RARER CHEMICAL GROUPS GENERAL**
Oxygen atoms may be replaced by S, where applicable.

B10-A01 **Sulfonium, iodonium, free radicals, carbonium, oxonium, etc.**

B10-A02 **Halogen bonded to Hal, N or O**
For halides of acids other than carboxylic (B10-A25) or those containing N-X or O-X (X = halogen) bond (B10-A02) the parent acid is coded. For example a sulfenyl halide is coded B10-A09C, a chloroformate B10-A11B and a carbamoyl halide B10-A12C.

B10-A03 **Nitrogen oxide, nitroso**
Includes nitramines

B10-A04 **Peroxide, polysulfide**
Also includes hydroperoxides

B10-A05 **Nitrate, nitrite**

B10-A06 **Quinone**
Including all derivatives except those with higher priority.

B10-A07 **Sugar**
Only 4 or more carbon monosaccharides with a free keto or aldehyde group together with their oxidised, reduced and substituted derivatives code here. Sugars in which at least one of the aldehyde / keto groups have been converted into an acetal / ketal (i.e. exist in cyclic form) code in B07-A02.

B10-A07A . **Unmodified sugars**
Includes ethers and esters thereof. 7 or more carbons are coded B10-A07E.
2005

B10-A07B . **Sugar alcohols**
Includes ether and ester derivatives. Derivatives in which one or two of the hydroxy groups have been replaced by N additionally code B10-A07D. Derivatives in which one or two of the hydroxy groups have been replaced by atoms other than H or N (including 7 or more carbon sugar alcohols) additionally code B10-A07E. Inositol is coded B10-E04A.
2005

B10-A07C . **Sugar acids**
Includes ether and ester derivatives. Derivatives in which one or two of the hydroxy groups have been replaced by N additionally code B10-A07D. Derivatives in which one or two of the hydroxy groups have been replaced by atoms other than H or N (including 7 or more carbon sugar acids) additionally code B10-A07E. Uronic acids which contain a free aldehyde or keto group (even if represented as a cyclic hemi-acetal in the source material) code here but those in which the hemi-acetal OH has been converted into an ether or ester code in B07-A02. Lactones of sugar alcohols code in the B07-A section.
2005

B10-A07D . **Sugar amines**
Used for 4 or more carbon monosaccharides with a free aldehyde or keto group (even if represented as a cyclic hemi-acetal in the source material) or an oxidised or reduced derivative thereof in which one or two of the O atoms have been replaced by nitrogen. If the sugar contains 7 or more carbons it additionally codes B10-A07E. If the sugar is an oxidised sugar it additionally codes B10-A07C. If the sugar is a reduced sugar it additionally codes B10-A07B.
2005

B10-A07E . **Other sugar derivatives**
Used for 4 or more carbon monosaccharides with a free aldehyde or keto group (even if represented as a cyclic hemi-acetal in the source material) or an oxidised or reduced derivative thereof in which one or two of the O atoms have been replaced by atoms other than H, or N. Additionally all 7 or more carbon non-cyclic monosaccharides code here. If the sugar is an oxidised sugar it additionally codes B10-A07C. If the sugar is a reduced sugar it additionally codes B10-A07B.
2005

B10-A08 **Amide of sulfur acid**

B10-A09 **Sulfur acid**
1963-1965

B10-A09A . **(Thio)Sulfuric(ous) acid**
Including all derivatives except those with higher priority.
1965

B10-A09B . **(Thio)Sulfonic acids general**
Including all derivatives except for those with higher priority.
1965

B10-A09C . **Other S acids**
Including all derivatives except those with higher priority.
1965

B10-A10 **Sulfone, sulfoxide**

B10-A11 **Carbonate general**
1963-1965

B10-A11A . **Thiocarbonic acid**
Including all derivatives except those with higher priority.
1965

B10-A11B . **Carbonic acid**
Includes haloformates.
1965

B10-A12 **Carbamate general**
1963-1965

B10-A12A . **Dithiocarbamic acid**
Including all derivatives except those with higher priority.
1965

B10-A12B . **Monothiocarbamic acid**
Including all derivatives except those with higher priority.
1965

B10-A12C . **Carbamic acid**
Including all derivatives except those with higher priorities.
1965

B10-A13 **Urea, isourea general**
1963-1965

B10-A13A . **(Iso)thiourea**
1965

B10-A13B . **(Iso)urea general**
Generic codes are only used for general disclosures which would otherwise require several specific codes. When a specific search is made, the corresponding generic code must also be searched.
1965

B10-A13C . **Unsubstituted urea**
1975

B10-A13D . **Other (iso)urea compounds**
1975

B10-A14 **(Iso)cyanate, thiocyanide**

B10-A15 **(Iso)cyanide**

B10-A16 **Azide, azo diazo(nium)**

B10-A17 **Biguanide, guanidine, amidine**

B10-A18 **Hydroxylamine**
Hydroxylamine itself is coded B05-C03.

B10-A19 **Hydrazine**
Hydrazine itself is coded B05-C03.

B10-A20 **Imine**

B10-A21 **Quaternary ammonium (bis or poly)**
When a patent claims amines and their quaternary ammonium salts, only the amines are coded. Two searches must be made in order to obtain all relevant quaternary ammonium compounds.

B10-A22 **Quaternary ammonium (mono)**

B10-A23 **Acetal, ketal**

B10-A24 **Imide**

B10-A25 **Acid anhydride, halide (carboxylic only)**
For halides of acids other than carboxylic (B10-A25) or those containing N-X or O-X (X = halogen) bond (B10-A02) the parent acid is coded. For example a sulfenyl halide is coded B10-A09C, a chloroformate B10-A11B and a carbamoyl halide B10-A12C.

B10-B **AMINES**

B10-B01 **Polyamine general**
1986

B10-B01A . **Polyamines, at least 1 amine aromatic**
1965

B10-B01B . **Polyamines with no amine aromatic**
1965

B10-B02 **Amino-acid, -ester or -amide general**
Oxygen atoms in the acid/ester/amide portion may be replaced by S where applicable.
1986

B10-B02A . **Amino-acid, -ester or -amide (amine aromatic)**
1965

B10-B02B . **Amino-acid, -ester or amide (amine not aromatic) general**
1965

B10-B02C . **Mixtures containing at least 3 naturally occurring amino acids**
1975

B10-B02D . **Sulfur-containing amino acids**
Including amides and esters of the acid group(s).
1975

B10-B02E . **Ring-containing amino acid with free acid group or salt**
1975

B10-B02F . **Ring-containing amino amide**
1975

B10-B02G . **Ring-containing amino ester**
1975

B10-B02H . **Optionally esterified or etherified hydroxy amino acids**
Including amides and esters of the acid group(s).
1975

B10-B02J . **Other amino acids**
Including amides and esters of the acid group(s).
1975

B10-B03 **Amino-phenol, -alcohol or ether general**
Oxygen atoms may be replaced by S, where applicable.
1986

B10-B03A . **Amino-phenol, -alcohol or -ether (amine aromatic)**
1971

B10-B03B . **Amino-phenol, -alcohol or -ether (amine not aromatic)**
1971

B10-B04 **Amine mono, general**
1986

B10-B04A . **Other aromatic amines**
1971

B10-B04B . **Other non-aromatic amines**
1971

B10-C **CARBOXYLIC ACIDS**

B10-C01 **Thiocarboxylic acid**

B10-C02 **Polycarboxylic acid**

B10-C03 **Carboxylic acid and phenol present**
Or phenolic ester or ether. Oxygen atoms may be replaced by S.

B10-C04 **Other carboxylic acids general**

B10-C04A . **Carboxylic acid and cycloaliphatic system present**
1975

B10-C04B . **Hydroxy, aldehyde or keto carboxylic acid and carbocyclic aromatic ring system present**
Including esters and ethers (of hydroxy) and thio derivatives.
1975

B10-C04C . **Other carboxylic acid and carbocyclic aromatic ring system present**
1975

B10-C04D . **Acyclic hydroxy**
Including acyclic ether (of hydroxy) and thio derivatives.
1975

B10-C04E . **General acyclic monocarboxylic acid**
General acyclic monocarboxylic acid (not substituted by hydroxy, aldehyde, keto or their ethers and/or thio derivatives).
1975

B10-C04E1 .. **Substituted acyclic monocarboxylic acid**
2006

B10-C04E2 .. **Polyunsaturated fatty acid**
2006

B10-C04E3 .. **Monounsaturated fatty acid**
2006

B10-C04E4 .. **Other unsaturated monocarboxylic acid**
2006

B10-C04E5 .. **Saturated fatty acid**
2006

B10-C04E6 .. **Other saturated monocarboxylic acid**
2006

B10-D **ALDEHYDES AND CARBOXYLIC AMIDES**
Oxygen atoms may be replaced by S, where applicable. These generic codes are only used for general disclosures which would otherwise require several specific codes. When a specific search is made, corresponding generic codes must also be searched.

B10-D01 **Aldehydes**

B10-D02 **Carboxylic amide, thio**

B10-D03 **Carboxylic amides**

B10-E **HYDROXY COMPOUNDS**
Oxygen atoms may be replaced by S, where applicable.

B10-E01 **Thiophenols**

B10-E02 **Phenols**

B10-E03 **Thioalcohols**

B10-E04 **Alcohols general**
Generic codes are only used for general disclosures which would otherwise require several specific codes. When a specific search is made, the corresponding generic codes must also be searched.

B10-E04A **. Alcohols containing hydroxy attached directly to alicyclic ring**
Including inositol.
1975

B10-E04B **. Alcohols containing carbocyclic ring(s)**
1975

B10-E04C **. Polyalcohols and ethers and esters thereof**
1975

B10-E04D **. Other alcohols**
1975

B10-F **KETONES**

B10-F01 **Thioketones**

B10-F02 **Ketones**

B10-G **CARBOXYLIC ESTERS AND NITRO**
Oxygen atoms may be replaced by S, where applicable.

B10-G01 **Thiocarboxylic esters**

B10-G02 **Carboxylic esters**

B10-G03 **Nitro**

B10-H **ETHERS AND HALOGENS**
Oxygen atoms may be replaced by S, where applicable.

B10-H01 **Ethers**

B10-H02 **Halogen general**
1986

B10-H02A **. F linked to aromatic ring**
1965

B10-H02B **. F not linked to aromatic ring**
1965

B10-H02C **. Br or I linked to aromatic ring**
1965

B10-H02D **. Br or I not linked to aromatic ring**
1965

B10-H02E **. Cl linked to aromatic ring**
1965

B10-H02F **. Cl not linked to aromatic ring**
1965

B10-J **HYDROCARBONS**

B10-J01 **-C≡C- may form part of alicyclic ring**
1965

B10-J02 **Other hydrocarbons**
1965

B10-J02A **. Terpenes or terpenoids**
General terpenes or terpenoids of purely hydrocarbon content.
2013

B11 PROCESSES, APPARATUS

B11 codes are only used when the inventive feature of the patent cannot be completely described in terms of chemical descriptors in B01 to B10. Test **methods** must be claimed for B11 codes to be applied, i.e. if a compound can be used as a reagent but the test is not claimed, only B12-K04+ codes are applied.

B11-A **FERMENTATION GENERAL**
Includes fermentation process where microorganisms are not specified
2012

B11-A01 **Using microorganisms**
1994

B11-A01A **. Using bacteria**
2006
Previous code(s): B11-A01

B11-A01B **. Using viruses**
2006
Previous code(s): B11-A01

B11-A01C **. Using fungi**
2006
Previous code(s): B11-A01

B11-A02 **Using enzymes**
1994

B11-A02A **. Using oxidoreductases general**
2006

B11-A02A1 **.. Using oxidases**
2006

B11-A02A2 **.. Using peroxidases**
2006

B11-A02A3 **.. Using oxygenases**
2006

B11-A02A4 **.. Using dehydrogenases, reductases**
2006

B11-A02A5 **.. Using lipoxygenases**
2006

B11-A02B **. Using transferases general**
2006

B11-A02B1 **.. Using DNA/RNA polymerases**
2006

B11-A02B2 **.. Using reverse transcriptases**
2006

B11-A02B3 **.. Using kinases**
2006

B11-A02C **. Using hydrolases general**
2006

B11-A02C1 **.. Using esterases**
2006

B11-A02C2 **.. Using glycosidases**
2006

B11-A02C3 **.. Using proteases/peptide hydrolases**
2006

B11-A02D **. Using lyases**
2006

B11-A02E **. Using isomerases**
2006

B11-A02F **. Using ligases**
2006

B11-A03 **Using algae**
2010

B11-A04 **Fermentation apparatus**
Apparatus or device for culturing microorganisms e.g. culturing device of alimentary canal nematodes.
2012

B11-A04A **. Cell/tissue culture apparatus**
Method and apparatus for culturing and processing of biological cells excluding tissue engineering (coded B11-C04G) e.g. animal cells and other microbial cells.
2014

B11-B **EXTRACTION, SEPARATION, RECOVERY, PURIFICATION, CRYSTALLISATION**
If part of a diagnostic process see B11-C08D.

B11-B01 **Separation of stereoisomers by a biological method**
2006

B11-B02 **Separation of stereoisomers by other method**
2006

B11-B03 **Other separation**
Includes extraction of specific substances from natural products.
2006

B11-B03A **. Method or device for separation of biological molecules**
Includes methods or devices for extraction of biological substances such as proteins and nucleic acids.
2012

B11-B03B **. Device/methods for concentrating of molecules**
Includes techniques involving concentrating procedure and distillation process, only for use when the Novelty of the invention.
2013

B11-B03C **. Method or device for extraction of active substances from plant**
Patents dealing with extraction of active agents from plants.
2016

B11-B03D **. Method or device for extraction of active substance from animals, arthropods**
Extraction of active substance from animals, arthropods, etc.
2021

B11-B04 **Method or device for removal processes**
A means of destroying or collecting for subsequent safe disposal of harmful / noxious substances. Substance removed and removing agent are additionally coded, even if they only appear in an example.
2006

B11-B05 **Method or device for preservation and/or storage**
Includes devices as well as methods for preservation and storage relating to preservation. General storage containers are coded in B11-C06.
2009

B11-B06 **Method or device for cleaning and/or sterilization**
Method or device for cleaning and/or sterilization, such as for medical equipment.
2010

B11-C GENERAL PROCESS, APPARATUS

B11-C01 **General chemical processes**
1971

B11-C01A **. Combinatorial chemistry**
2002

B11-C01A1 **.. Library synthesis**
Used when the patent is describing a technique for producing, rather than using a combinatorial library.
2005

B11-C01A2 **.. Liquid-phase synthesis**
Process in which the chemical building blocks are present in solution.
2005

B11-C01A3 **.. Solid-phase synthesis**
Process in which the chemical building blocks are bound to a polymer.
2005

B11-C01A4 **.. Parallel synthesis**
Process in which each separate starting material is present in a different well of a microarray and the reagent is added simultaneously to all wells so each product is present in a different well.
2005

B11-C01A5 **.. High-volume synthesis**
Process in which very large numbers of compounds are produced from a large variety of starting materials.
2005

B11-C01B **. Apparatus for combinatorial chemistry**
2002

B11-C01C **. Other processes**
2002

B11-C01C1 **.. Stereospecific reactions**
2006

B11-C01C2 **.. Stereoselective reactions**
2006

B11-C01C3 **.. Racemisation**
2012

B11-C01D **. Stereochemistry**
Includes geometrical isomers.
2006

B11-C01E **. Amplification apparatus/processes for production**
From 2011, the scope of this code has been extended to cover amplification apparatus for production in addition to processes for the same.
2007
Previous code(s): B11-A02B1

B11-C01F **. Irradiation, photochemistry, photocatalysis**
2026

B11-C02 **Syringes**
Also includes filling/loading of syringes.
1971

B11-C02A **. Hypodermic syringes**
Includes multi-use as well as single-use and moulded disposable syringes.
2005

B11-C02B **. Needles**
Should cover all needles, not just those for syringes. Not for microneedles – these are coded under B12-M02F instead.
2005

B11-C02C . **Syringe components**
2006

B11-C02D . **Syringe/injector disposal apparatus**
Covers disposal of all injectors, not just syringes. Also includes syringe needle removing devices and sharps container.
2006

B11-C03 **Dispensers**
1971

B11-C04 **Machine/device/method for use in/on animal body, general**
From 2010, the scope of this code has been extended to cover methods used for therapeutic purposes on animal or human body in addition to machines and devices for the same. This code can be applied to condoms, external splints, infra-red heat massagers etc, however such items should either contain, be coated with or be used in conjunction with drugs in order for them to be coded in B and/or C.
1971

B11-C04A . **Implant**
1977

B11-C04A1 .. **Stent**
2006

B11-C04B . **Catheter**
Includes cannula.
1977

B11-C04C . **Injection gun, general**
2005

B11-C04D . **Applicator**
2005

B11-C04E . **Needle-free injector**
A syringe type device that uses applied pressure to inject the drug through the skin, and particularly into the gums during dental procedures.
2005

B11-C04F . **Artificial organs**
Including heart-lung machines, kidney dialysis equipment, pacemakers and artificial livers and skin. Includes production of these organs. Not to be confused with Prosthesis (coded B12-M17) or Implants (coded B11-C04A).
2005

B11-C04G . **Tissue engineering technologies**
Includes wound care technologies, stem cell therapeutic applications, and tissue and organ production (e.g. by inkjet printers and tissue scaffolds).
2007

B11-C04H . **Adaptors, fixing devices, seals**
Used for e.g. attaching tubes to syringes, attaching catheter tubes to supports.
2009

B11-C04J . **Cements, putties**
Includes bone cement etc.
2010

B11-C04K . **Bioelectronics and neurostimulation**
Includes electroceuticals. May also be searched with B14-S27
2015

B11-C04Z . **Non-pharmaceutical alternative therapies**
Includes therapies such as music therapy, laughter therapy, heat therapy, acupuncture and reiki. Does not include electrical or electromagnetic therapies which are coded in B14-S27 with additionally B11-C04 if the apparatus is also claimed.
2012

B11-C05 **Process/ apparatus for producing pharmaceutical, veterinary or agricultural composition**
Includes tabletting machines. Also covers any process for producing drugs or their intermediate products e.g. drug mixer, device for drying a drug, device for crushing a drug.
1971

B11-C06 **Containers, packing, preserving apparatus, storage tanks, transporting apparatus general**
1975

B11-C06A . **Closures, caps**
1977

B11-C06B . **Formulation counting/measuring devices**
e.g. tablet counting machines, cylinders for measuring solutions, weighing devices.
2009

B11-C06C **. Peripheral devices for therapeutic regimens**
Includes stands for e.g. infusion devices, tamper alarms.
2010

B11-C06D **. Labels and labeling devices**
2011

B11-C06E **. Temperature regulation apparatus**
2012

B11-C06Z **. Safety and tamper-proof devices/methods**
Applied with one or more other codes from B11-C02, B11-C03, B11-C04 and/or B11-C06. Includes methods and devices to improve patient safety e.g. alarms for incorrect operation of dispensers. Safety caps, previously coded only in B11-C06A, also now coded here.
2017

B11-C07 **Antibody-antigen reaction, precipitation tests; colorimetric, fluorescence, radioactive tracer tests, general**
B11-C07+ and B11-C08+ codes are applied when diagnosis/testing process forms a novel part of an invention.
1975

B11-C07A **. Antigen - antibody reaction general**
Excluding B11-A.
1977

B11-C07A1 **.. Production of antigen for test**
1986

B11-C07A2 **.. Antigen or antibody bound to colour tracer**
1986

B11-C07A3 **.. Antigen or antibody bound to radioactive tracer**
1986

B11-C07A4 **.. Antigen or antibody bound to enzyme tracer**
1986

B11-C07A5 **.. Antigen or antibody bound to fluorescent or chemiluminescent tracer**
1986

B11-C07A6 **.. Antigen or antibody bound to other type of carrier**
e.g. erythrocytes, glass, polymer.
1986

B11-C07A7 **.. Apparatus for antigen-antibody reaction, where the antigen or antibody type or carrier are irrelevant to the invention**
1986

B11-C07B **. Colorimetric tests**
Including fluorescence (excluding B11-C07A).
1977

B11-C07B1 **.. Colorimetric (detection of colour change in a reagent)**
1986

B11-C07B2 **.. Spectrophotometric**
1986

B11-C07B3 **.. Fluorescence**
1986

B11-C07B4 **.. Chemiluminescence**
1986

B11-C07B5 **.. Radioactive tracer other than B11-C07A3**
1986

B11-C07B6 **.. Reflectance, light scattering etc.**
2005

B11-C07B7 **.. Apparatus for colorimetric analysis where the apparatus is the novelty of the invention**
2009

B11-C08 **Other methods/apparatus for testing/detection**
Including new drug screening systems.
1975

B11-C08A **. NMR, mass spectroscopy**
Excluding NMR, mass spectroscopy for gene/protein analysis which is coded under B11-C08G2.
1986

B11-C08B **. Potentiometry, polarography**
1986

B11-C08C **. Sampling device and sampling method for testing**
From 2010, the scope of this code has been extended to cover methods of sampling in addition to devices for the same. Includes both devices and method of sampling, wherein the method of collecting samples is for test and detection purposes.
1986

B11-C08C1 **.. Microfluidic devices**
2007

B11-C08C2 **.. Manipulation of samples**
Includes methods or devices for treating biopsy or smear samples to make them easier to view.
2014

B11-C08D **. Separation methods of testing and diagnosis general**
Other than B11-B.
1986

B11-C08D1 **.. Electrophoresis**
1986

B11-C08D2 **.. Chromatography, ion exchange**
Including High Performance Liquid Chromatography (HPLC).
1986

B11-C08D3 **.. Filtration, centrifugation, sedimentation, dialysis**
1986

B11-C08E **. Biological procedures for testing general**
Other than B11-A and B11-C07A.
1986

B11-C08E1 **.. Fermentation of micro-organisms, cell or tissue culture**
e.g. testing antibiotics by cultivation of microorganisms.
1986

B11-C08E2 **.. Noting physiological responses in animals or plants/modelling diseases**
e.g. increased activity, change of habit. Includes AI disease modelling. This code is applied only when the test is the main inventive feature.
1986

B11-C08E3 **.. Enzyme processes other than polarography or enzyme labelling**
Excluding B11-C07A, but including the use of restriction enzymes (endonucleases) and the polymerase chain reaction (PCR). For more specifically described PCR methodologies, up to three additional codes from subsection B11-C08N may be appended (from update 202201).
1986

B11-C08E4 **.. DNA sequencing methods**
Other than those involving enzymes.
1994-2018
Previous code(s): B11-C08, B11-C08E3
Now coded as: B11-C08F7A

B11-C08E5 **.. Nucleic acid hybridisation test methods, use of nucleic acid probes**
1994-2018
Previous code(s): B11-C08, B11-C08E3
Now coded as: B11-C08F8

B11-C08E6 **.. Microarrays and biochips**
2002

B11-C08E7 **.. Agonist/antagonist identification**
2005

B11-C08E8 **.. Biosensor**
To be searched alongside the physicochemical and/or biological parts where present.
2016

B11-C08E9 **.. Protein sequencing method**
Code retired 2018, now coded B11-C08F7B. All document records from 2018 containing this code will be changed to reflect the updated hierarchy and B11-C08E9 will no longer be searchable
2018-2018

B11-C08F **. Protein/Gene analysis general**
2002

B11-C08F1 **.. Computational genomics**
2002-2018
Now coded as: B11-C11C1

B11-C08F2 **.. Experimental genomics**
2002

B11-C08F3 **.. Computational proteomics**
2002-2018
Now coded as: B11-C11C2

B11-C08F4 **.. Experimental proteomics**
2002

B11-C08F5 **.. Functional genomics**
2009

B11-C08F6 **.. Functional proteomics**
2009

B11-C08F7 **.. Sequencing methods general**
2019

B11-C08F7A **... DNA/RNA sequencing methods**
Includes Next Generation Sequencing and other high-throughput processing methods..
2019
Previous code(s): B11-C08, B11-C08E4

B11-C08F7B **... Protein sequencing methods**
Replaces the deleted code B11-C08E9. All affected document records from 2018 will be changed to reflect the updated hierarchy and B11-C08E9 will no longer be searchable
2019

B11-C08F8 **.. Nucleic acid hybridization test methods, use of nucleic acid probes**
2019
Previous code(s): B11-C08, B11-C08E5

B11-C08G **. Structural conformation analyzing method for biomolecules**
Prior to 2011, this code covered structural gene/protein analysis only. From 2011, the scope of this code has been extended to cover structural analysis of all biomolecules. Also includes structural analysis of polysaccharide, nucleic acid, lipid, glycoprotein, glycolipid and RNA molecule.
2002

B11-C08G1 **.. X-ray crystallography**
2002

B11-C08G2 **.. NMR spectroscopy**
2002

B11-C08G3 **.. Electron microscopy**
2002

B11-C08H **. Drug design by computer modelling**
2002

B11-C08J **. Microscopy/ optical processes & apparatus**
2005

B11-C08K **. Other analytical apparatus where the apparatus is the novelty of the invention**
Novel apparatus for colorimetric analysis codes as B11-C07B7.
2009

B11-C08L **. Acoustics**
Includes ultrasound, infrasound and vibration.
2016

B11-C08M **. Calorimetry**
2020

B11-C08N **. Biological testing methodologies**
This code is a section heading only and is not applied to patents. See the relevant B11-C08N sub-codes instead.
2022

B11-C08N1 **.. Thermocycling amplification methods**
For three or more specific sub-codes or for general references to thermocycling methods, only the parent code B11-C08N1 is applied. General references to PCR are searched under B11-C08E3.
2022

B11-C08N1A **... Multiplex PCR**
2022

B11-C08N1B **... Nested PCR**
2022

B11-C08N1C **... Colony PCR**
2022

B11-C08N1D **... Random amplification polymorphism DNA PCR (RAPD-PCR)**
2022

B11-C08N1E **... Simple sequence repeat-anchored PCR (SSR-PCR)**
2022

B11-C08N1F **... Amplified fragment length polymorphism PCR (AFLP-PCR)**
2022

B11-C08N1G **... Amplification of refractory mutation system PCR (ARMS-PCR)**
2022

B11-C08N1H **... Restriction fragment length polymorphism (RFLP)**
Includes Derived Cleaved Amplified Polymorphic Sequences PCR (dCAPS-PCR).
2022

B11-C08N1J **... Ligase chain reaction (LCR)**
2022

B11-C08N1K **... Kompetitive allele specific PCR (KASP)**
Includes Includes allele-specific polymerase chain reaction (ASP-PCR). Code additionally fluorescence (B11-C07B3) for PCR.
2024

B11-C08N2 **.. Isothermal amplification methods, general and other**
For three or more specific sub-codes or general references to isothermal methods, only the parent code B11-C08N2 is applied.
2022

B11-C08N2A **... Loop mediated isothermal amplification (LAMP)**
Also includes RT-LAMP.
2022

B11-C08N2B **... Self-sustained sequence replication (3SR)**
2022

B11-C08N2C **... Strand displacement amplification (SDA)**
2022

B11-C08N2D **... Nucleic acid sequence based amplification (NASBA)**
2022

B11-C08N2E **... Rolling circle amplification (RCA)**
2022

B11-C08N2F **... Multiple displacement amplification (MDA)**
Includes Whole Genome Amplification (WGA), Multiple Annealing and Looping Based Amplification Cycles (MALBAC).
2022

B11-C08N2G **... Helicase dependent amplification (HAD)**
2022

B11-C08N2H **... Ramification amplification method (RAM)**
2022

B11-C08N2J **... Recombinase polymerase amplification (RPA)**
2022

B11-C08N3 **.. Real-time analysis**
To be searched alongside the relevant testing and diagnostic codes when this term is referenced in the source document.
2022

B11-C08N4 **.. Rapid analysis**
To be searched alongside the relevant testing and diagnostic codes when this term is referenced in the source document.
2022

B11-C09 **Other processes, appts.**
Processes and apparatus not covered elsewhere in section 11.
1975

B11-C09A **. Processes**
2006

B11-C09B **. Apparatus**
2006

B11-C10 **Screening general**
2002

B11-C10A **. High throughput screening**
2002

B11-C10B **. High content screening**
Whole cell analysis used in drug screening, differs from high-throughput screens which are usually homogenous in vitro assays. Includes analysis of multiple independent or interacting targets in intact cells using e.g. advanced optical imaging systems, fluorescent based reagents and advanced informatics tools. Also includes predictive toxicity and ADME (absorption, distribution, metabolism and excretion) screening.
2005

B11-C10C **. Protein/gene libraries**
Collections of protein or nucleic acid fragments and clones used as a tool in biochemical processes.
2005

B11-C10D **. Phage display libraries**
2005

B11-C11 **General computing methods & apparatus**
Including media and methods for storing, searching and retrieving data and drug databases. Also for computerised pharmacological models.
2005

B11-C11A **. Patient compliance methods & systems**
Methods concerning patient compliance, e.g. medication reminders.
2005

B11-C11B **. Computerised teaching models**
Includes computer simulations used to show drug effects, such as in university courses.
2014

B11-C11C **. Computational protein/nucleic acid analysis**
2019

B11-C11C1 **.. Computational genomics**
2019
Previous code(s): B11-C08F1

B11-C11C2 **.. Computational proteomics**
2019
Previous code(s): B11-C08F3

B11-C12 **Nanotechnology (general)**
Includes nanoswitches made of DNA, nanorobots and DNA origami.
2005

B11-C13 **Particle engineering**
Any process concerned with the design of the physical form of the particles in the dosage (as opposed to the chemical constitution of them). This optimises drug delivery properties of the dosage form.
2005

B11-C14 **Security systems (e.g. biometric data, retinal scanning, authentication of drugs, DNA labelling for security purposes, etc.)**
2008

B11-C15 **Biological tools/models/teaching aids**
Physical entities only. For Computerised teaching models see B11-C11B.
2011

B11-C15A **. Computerised teaching models**
Includes computer simulations used to show drug effects.
2021

B11-C16 **Apparatus specifically for pediatrics or geriatrics**
Includes apparatus for neonates and adolescents.
2017

B11-C17 **Bioprinting**
Includes pre- and post-bioprinting procedures. Additionally coded with B11-C04G for tissue engineering via bioprinting or B11-C04F for printable organs.
2017

B12 DIAGNOSTICS AND FORMULATION TYPES (Therapeutic, Pesticidal, Herbicidal) (pre-1994)

B12-A **ANTIMICROBIAL TYPE**

B12-A01 **Antibacterial**
Antibiotics are only B02. Immunostimulant with B12-A06 (pre-1994).
1963-1993
Now coded as: B14-A1+

B12-A02 **Antifungal, antialgal, antilichen general**
1963-1993
Now coded as: B14-A04+,B14-B08

B12-A02A **. Antialgal**
1986-1993

B12-A02B **. Antilichen**
1986-1993
Now coded as: B14-B08

B12-A02C **. Antifungal**
1986-1993
Now coded as: B14-A04+

B12-A03 **Antileprotic**
1963-1993
Now coded as: B14-A01B1

B12-A04 **Antitubercular**
1963-1993
Now coded as: B14-A01B1A

B12-A05 **Antivenereal**
1963-1993
Now coded as: B14-N07C, B14-A01A, B14-A01A5

B12-A06 **Antiviral**
Vaccines are only B02-V. Immunostimulant with B12-A01 (pre-1994).
1963-1993
Now coded as: B14-A02+

B12-A07 **Skin and wound treatment**
1963-1993
Now coded as: B14-N17+

B12-A08 **Antifouling**
(prior to 198601 search B12-A02, B12-N01, B12-N04 and B12-N05)
1986-1993

B12-B **ANTIPARASITIC TYPE**

B12-B01 **Amoebicide**
1963-1993
Now coded as: B14-A03A

B12-B02 **Anthelmintic**
1963-1993
Now coded as: B14-B03

B12-B03 **Antimalarial**
1963-1993
Now coded as: B14-A03B

B12-B04 **Antiparasitic (general) acaricide**
1963-1993
Now coded as: B14-B02

B12-B05 **Coccidiostat**
1963-1993
Now coded as: B14-A03C

B12-B06 **Schistosomicide**
1963-1993
Now coded as: B14-B03A

B12-B07 **Trypanocide**
1963-1993
Now coded as: B14-A03E

B12-C **CNS-ACTIVE TYPE (I)**

B12-C01 **Anesthetic (general)**
1963-1993
Now coded as: B14-C07

B12-C02 **Anesthetic (local)**
1963-1993
Now coded as: B14-C08

B12-C03 **Analeptic**
1963-1993
Now coded as: B14-J01A2

B12-C04 **Antiparkinsonian drug**
1963-1993
Now coded as: B14-J01A3

B12-C05 **Central depressant**
1963-1993
Now coded as: B14-J01B

B12-C06 **Central stimulant**
1963-1993
Now coded as: B14-J01A, B14-J01A1

B12-C07 **Hypnotic**
1963-1993
Now coded as: B14-J01B1

B12-C08 **Sedative**
1963-1993
Now coded as: B14-J01B2

B12-C09 **Synergist**
1963-1993
Now coded as: B14-S09

B12-C10 **Tranquilliser**
1963-1993
Now coded as: B14-J01B4, B14-J01A4, B14-F02D1, B14-J01, B14-J01B3, B14-N16, B14-S07

B12-D **CNS-ACTIVE TYPE (II)**

B12-D01 **Analgesic**
1963-1993
Now coded as: B14-C01

B12-D02 **Antiallergic general**
1963-1993
Now coded as: B14-G02A

B12-D02A **. Autoimmune disease treatment**
See also B12-D03, B12-D07, B12-D09.
1986-1993
Now coded as: B14-G02D

B12-D02B **. Immune suppressant**
Immunomodulatory is also coded as B12-A01 and B12-A06
1986-1993
Now coded as B14-G02, B14-G03, B14-G02C

B12-D02C **. Complement inhibitor**
1986-1993
Now coded as B14-G02D

B12-D02D **. Anti slow-releasing-substance of anaphylaxis (SRS-A)**
1986-1993
Now coded as: B14-G02B

B12-D03 **Antiarthritic**
1963-1993
Now coded as: B14-C09+

B12-D04 **Anticonvulsant**
1963-1993
Now coded as: B14-J07

B12-D05 **Antiemetic**
1963-1993
Now coded as: B14-E05

B12-D06 **Antihistamine general**
For gastric secretion inhibitor see also B12-J02.
1963-1993
Now coded as: B14-L09

B12-D06A **. H2 secretion inhibitor**
1986-1993
Now coded as: B14-L11

B12-D06B **. H1 inhibitor**
1986-1993
Now coded as: B14-L10

B12-D07 **Antiinflammatory**
1963-1993
Now coded as: B14-C02, B14-C03

B12-D08 **Antipyretic**
1963-1993
Now coded as: B14-C04, B14-C05

B12-D09 **Antirheumatic**
1963-1993
Now coded as: B14-C06

B12-D10 **Convulsant**
1963-1993
Now coded as: B14-J06

B12-E **AUTONOMIC N.S. ACTIVE TYPE**

B12-E01 **Autonomic N.S. active general**
1963-1993
Now coded as: B14-F02, B14-J02

B12-E02 **Muscle relaxant, inotropic**
See also B12-F01.
1963-1993
Now coded as: B14-J05, B14-J05A, B14-J05C, B14-J05D

B12-E03 **Mydriatic/myopic**
1963-1993
Now coded as: B14-J05B

B12-E04 **Parasympathetic blocker**
1963-1993
Now coded as: B14-J02B+, B14-J05D

B12-E05 **Parasympathetic stimulant, acetyl choline potentiator**
1963-1993
Now coded as: B14-J02A+

B12-E06 **Sympathetic blocker general**
1963-1993
Now coded as: B14-J02D, B14-J02D3

B12-E06A **. Alpha-adrenergic blocker**
1986-1993
Now coded as: B14-J02D1

B12-E06B **. Beta-adrenergic blocker**
1986-1993
Now coded as: B14-J02D2

B12-E07 **Sympathetic stimulant, adrenergic stimulant, adrenaline potentiator**
1963-1993
Now coded as: B14-J02C+

B12-E08 **Ulcers (peptic and duodenal)**
1963-1993
Now coded as: B14-E08

B12-E09 **Uterus active**
1963-1993
Now coded as: B14-N14

B12-F **CARDIOACTIVE TYPE**
Previous code(s): B14-F

B12-F01 **Cardioactive general**
1963-1993
Now coded as: B14-F01

B12-F01A **. Arrhythmia treatment**
1986-1993
Now coded as: B14-F01A

B12-F01B **. Cardiac stimulant**
Including treatment of myocardial infarct, myocardial contraction intensifying, cardiac arrest treatment, cardiotonic, cardiac insufficiency treatment.
1986-1993
Now coded as: B14-F01B

B12-F01C **. Cardiovascular, inotropic**
Before 198602 inotropic was coded B12-E02.
1986-1993
Now coded as: B14-F01C

B12-F02 **Coronary dilator**
1963-1993
Now coded as: B14-F01D,B14-F01E

B12-F03 **Ganglion blocker**
1963-1993
Now coded as: B14-F01F

B12-F04 **Hypertensive**
1963-1993
Now coded as: B14-F02A

B12-F05 **Hypotensive general**
1963-1993
Now coded as: B14-F02B

B12-F05A **. Angiotensin converting enzyme inhibitor, renin inhibitor**
1986-1993
Now coded as: B14-F02B1

B12-F05B **. Calcium entry blockers**
B12-G01 may also be searched.
1986-1993
Now coded as: B14-F02B2

B12-F06 **Vasoconstrictor**
1963-1993
Now coded as: B14-F02C

B12-F07 **Vasodilator**
1963-1993
Now coded as: B14-F02D+

B12-G **METABOLISM ACTIVE TYPE**

B12-G01 **Antimetabolite general**
1963-1993
Now coded as: B14-J04, B14-L06, B14-L07, B14-L08

B12-G01A **. Antihormone, antiandrogenic, antiestrogenic, antiprogestational, adrenal cortex inhibitor**
1986-1993
Now coded as: B14-D02+

B12-G01B **. Enzyme inhibitor**
1986-1993
Now coded as: B14-D03,B14-D04

B12-G01B1 **.. Antioxidoreductase**
1986-1993
Now coded as: B14-D05+

B12-G01B2 **.. Antitransferase**
1986-1993
Now coded as: B14-D06+

B12-G01B3 **.. Antihydrolase**
1986-1993
Now coded as: B14-D07+

B12-G01B4 .. **Antilyase**
1986-1993
Now coded as: B14-D08

B12-G01B5 .. **Antiisomerase**
1986-1993
Now coded as: B14-D09

B12-G01B6 .. **Antiligase (antisynthetase)**
1986-1993
Now coded as: B14-D10

B12-G02 **Choleretic and liver**
1963-1993
Now coded as: B14-N12

B12-G03 **Diuretic and kidney**
For urinary tract infections see B12-A01.
1963-1993
Now coded as: B14-F02E, B14-N10

B12-G04 **Hormone adrenocortical**
Including Addison's disease treatment (general).
1963-1993
Now coded as: B14-D01, B14-D01D, B14-D01E, B14-J03

B12-G04A . **Anti-aging, anti-senility, anti-Alzheimer's disease**
Including non-hormonal treatment.
1986-1993
Now coded as: B14-J01A4

B12-G04B . **Androgenic**
1986-1993
Now coded as: B14-D01A

B12-G04C . **Estrogenic**
1986-1993
Now coded as: B14-D01B

B12-G04D . **Progestational**
1986-1993
Now coded as: B14-D01C

B12-G05 **Leukemia treatment**
1963-1993
Now coded as: B14-H01A

B12-G06 **Thyroid agent**
1963-1993
Now coded as: B14-N11

B12-G07 **Tumour inhibitor**
1963-1993
Now coded as: B14-H01,B14-H01B

B12-H BLOOD ACTIVE TYPE

B12-H01 **Antianemic**
1963-1993
Now coded as: B14-F03

B12-H02 **Anticoagulant**
1963-1993
Now coded as: B14-F04

B12-H03 **Antilipemic**
1963-1993
Now coded as: B14-F06, B14-F07

B12-H04 **Coagulant**
1963-1993
Now coded as: B14-F08

B12-H05 **Hypoglycemic**
1963-1993
Now coded as: B14-F09, B14-F10

B12-H06 **Plasma and blood substitutes**
1963-1993
Now coded as: B14-F11

B12-J GASTROINTESTINAL ACTIVE TYPE

B12-J01 **Anabolic agent, nutritional, achlorhydria treatment (humans)**
1963-1993
Now coded as: B14-E10+, B14-E11

B12-J02 **Anorectic, antisecretory**
1963-1993
Now coded as: B14-E07, B14-E12

B12-J03 **Antacid**
1963-1993
Now coded as: B14-E01, B14-E03

B12-J04 **Antidiarrheal, antihemorrhoidal**
1963-1993
Now coded as: B14-E02, B14-E04

B12-J05 **Antidote general**
1963-1993
Now coded as: B14-M01, B14-M01C

B12-J05A . **Alcoholism treatment**
1986-1993
Now coded as: B14-M01A

B12-J05B . **Antismoking**
1986-1993
Now coded as: B14-M01B

B12-J05C . **Anti-heavy metal poisoning**
1986-1993
Now coded as: B14-M01D

B12-J05D . **Pesticide or herbicide antidote**
1986-1993
Now coded as: B14-M01E

B12-J05E . **Protecting plants from poisons**
1986-1993

B12-J06 **Emetic**
1963-1993
Now coded as: B14-E06

B12-J07 **Laxative**
1963-1993
Now coded as: B14-E09

B12-J08 **Bone disorder treatment, osteoporosis**
Excluding arthritis treatment (B12-D03) and bone marrow cell disorders (B12-G05). For osteoporosis prior to 198601 search B12-J01.
1986-1993
Now coded as: B14-N01

B12-K **DIAGNOSTICS RESPIRATORY ACTIVE TYPE (PRE-1994)**

B12-K01 **Antitussive**
1963-1993
Now coded as: B14-K01B

B12-K02 **Bronchodilator**
1963-1993
Now coded as: B14-K01D

B12-K03 **Contraceptive**
1963-1993
Now coded as: B14-P01+

B12-K04 **Diagnosis and testing general**
This section is used for coding substances which are stated to be detecting agents: e.g. a new antibody used for detecting cancer is coded under B04-G and B12-K04G2A only. When the procedure for detecting is descibed as novel, then the corresponding B11-C07 and B11-C08 codes are also applied.
As of 201601, subsection B12-K04A has been retired and the codes reorganised and expanded in new subsection B12-K04G.

B12-K04A **. Diagnosis of diseases or conditions in animals general**
Including detection of glucose in blood and ethanol in breath.
1986-2015
Now coded as B12-K04G

B12-K04A1 **.. Diagnosis of tumours, cancer**
1986-2015
Now coded as B12-K04G2A

B12-K04A2 **.. Diagnosis of heart and circulatory disorders**
1986-2015
Now coded as B12-K04G2B

B12-K04A3 **.. Diagnosis of genetic disorders**
1986-2015
Now coded as B12-K04G2C

B12-K04A4 **.. Diagnosis of microbial infections**
1986-2015
Now coded as B12-K04G1A

B12-K04A4A **... Detection of viral diseases**
2005-2015
Now coded as B12-K04G1B

B12-K04A4B **... Detection of bacterial diseases**
2005-2015
Now coded as B12-K04G1C

B12-K04A4C **... Detection of fungal diseases**
2015-2015
Now coded as B12-K04G1D

B12-K04A5 **.. Diagnosis of CNS disorders**
1986-2015
Now coded as B12-K04G2D

B12-K04A6 **.. Diagnosis of pregnancy, testing or measuring sex hormone levels and oestrus cycle**
1986-2015
Now coded as B12-K04G2E

B12-K04A7 **.. Detection of parasites**
Including protozoa and helminths.
2006-2015
Now coded B12-K04G1E

B12-K04A8 **.. Diagnosis of immunological disorders**
2007-2015
Now coded as B12-K04G2F

B12-K04A9 **.. Diagnosis of respiratory disorders**
Includes detection of diseases such as anoxia, cystic fibrosis and bronchitis.
2012-2015
Now coded as B12-K04G2G

B12-K04A10 **.. Diagnosis or detection of endocrine and hormonal diseases**
Diagnosis or detection of endocrine and hormonal diseases including thyroid diseases.
2015-2015
Now coded as B12-K04G2H

B12-K04B **. In vivo radiopharmaceutical diagnostics**
Excludes in vivo X-ray and MRI diagnostics, which are coded in B12-K07, and other types of in vivo imaging which are coded in B12-K04C.
1986

B12-K04C **. In vivo imaging (other than by X-ray or radiopharmaceuticals)**
Including imaging of complete organs, cells e.g. cancer cells, or other biological molecules within a whole body rather than a sample.
1986

B12-K04C1 **.. Ultrasonics**
1994
Previous code(s): B12-K04C

B12-K04C2 **.. NMR**
1994
Previous code(s): B12-K04C

B12-K04C3 **.. Tomography**
Includes PET (positron emission tomography).
2007

B12-K04D **. Testing for plant disorders or diseases**
1986-2018

B12-K04E **. Testing for substances other than for diseases**
Not in body fluids.
1986

B12-K04E1 **.. Drug discovery process**
2005

B12-K04E2 **.. Environmental testing**
Includes testing for contaminants in rivers.
2005

B12-K04E3 **.. Other drug testing**
Includes quality control.
2007

B12-K04F **. Tests involving nucleic acid, hybridisation probes etc.**
1994
Previous code(s): B12-K04,B12-K04A

B12-K04G **. Diagnosis of diseases or conditions in animals general**
Including detection of glucose in blood and ethanol in breath.
2016
Previous code(s): B12-K04A

B12-K04G1 **.. Diagnosis of infections and exogenous disorders**
2016

B12-K04G1A **... Diagnosis of microbial diseases general and other**
2016
Previous code(s): B12-K04A4

B12-K04G1B **... Detection of viral diseases**
2016
Previous code(s): B12-K04A4A

B12-K04G1C **... Detection of bacterial diseases**
2016
Previous code(s): B12-K04A4B

B12-K04G1D **... Detection of fungal diseases**
2016
Previous code(s): B12-K04A4C

B12-K04G1E **... Detection of parasites**
Including protozoa and helminths.
2016
Previous code(s): B12-K04A7

B12-K04G2 **.. Diagnosis of endogenous disorders general and other**
2016

B12-K04G2A **... Diagnosis of tumors, cancer**
2016
Previous code(s): B12-K04A1

B12-K04G2B **... Diagnosis of heart and circulatory disorders**
2016
Previous code(s): B12-K04A2

B12-K04G2C **... Diagnosis of genetic disorders**
2016
Previous code(s): B12-K04A3

B12-K04G2D **... Diagnosis of CNS disorders**
2016
Previous code(s): B12-K04A5

B12-K04G2E **... Diagnosis of pregnancy, testing or measuring sex hormone levels and estrus cycle**
2016
Previously coded as: B12-K04A6

B12-K04G2F **... Diagnosis of immunological disorders**
2016
Previous code(s): B12-K04A8

B12-K04G2G **... Diagnosis of respiratory disorders**
Includes detection of diseases such as anoxia, cystic fibrosis and bronchitis.
2016
Previous code(s): B12-K04A9

B12-K04G2H **... Diagnosis of endocrine and hormonal diseases**
Including thyroid diseases.
2016
Previous code(s): B12-K04A10

B12-K04G2I **... Diagnosis of gastrointestinal disorders**
2016

B12-K04G2J **... Diagnosis of renal and urological disorders**
2016

B12-K04G2K **... Diagnosis of metabolic disorders**
2021

B12-K05 **Expectorant**
1963-1993
Now coded as: B14-K01E

B12-K06 **Respiratory active**
1963-1993
Now coded as: B14-K01,B14-K01C

B12-K07 **Contrast agents and medium**
Prior to 2010, this code covered X-ray contrast media only. Includes X-ray and MRI agents and media. Does not include radiopharmaceuticals (coded in B12-K04B) and other in-vivo imaging (coded in B12-K04C).
1963

B12-L COSMETIC PREPARATION TYPE

B12-L01 **Antiperspirant**
1963-1993
Now coded as: B14-R03

B12-L02 **Cosmetic**
1963-1993
Now coded as: B14-R01

B12-L03 **Dental agent**
1963-1993
Now coded as: B14-N06

B12-L04 **Ear, nose, eye, mouth and throat preparation**
1963-1993
Now coded as: B14-N02, B14-N03, B14-N04, B14-N05

B12-L05 **Hair preparation**
1963-1993
Now coded as: B14-R02

B12-L06 **Insect repellent**
1963-1993
Now coded as: B14-B05

B12-L07 **Perfume**
1963-1993
Now coded as: B14-R04

B12-L08 **Sunscreen agent**
1963-1993
Now coded as: B14-R05

B12-L09 **Veterinary**
1963-1993

B12-L10 **Agricultural composition general**
1966-1993

B12-M **FORMULATIONS TYPE**
Codes in this section are applied only when the formulation is the main feature of the invention, or ingredients are not specified.

B12-M01 **Aerosol, inhalent, smoke general**

B12-M01A **. Aerosol**
1986

B12-M01B **. Inhalent**
1986

B12-M01B1 **.. Dry powder inhaler**
A dry powder inhaler (DPI) is similar to a metered dose inhaler, but is breath-activated, so the patient does not have to co-ordinate activation of the inhaler with inhalation of medicament.
2005

B12-M01B2 **.. Multidose inhaler**
A different type of inhaler that is also breath-activated. Used to deliver many smaller doses to make up the full required dosage.
2005

B12-M01B3 **.. Nebuliser**
A device which is used to administer a solution of drug in the form of a fine mist for patient to inhale. Air is forced through the drug solution in the drug chamber, changing the liquid into a fine mist which is breathed in through a mask or mouthpiece.
2005

B12-M01B4 **.. Metered dose inhaler**
2008

B12-M01C **. Smoke**
Also includes incense.
1986

B12-M01D **. Intranasal**
2002-2006
Now coded as: B12-M12Q

B12-M01E **. Other gaseous forms**
2005

B12-M02 **Cream, gel, ointment, plaster**

B12-M02A **. Toothpaste, toothpowder**
From 198601 B12-L03 is not additionally applied.
1986

B12-M02B **. Ointment, cream, lotion**
Includes liniment, paste, balm and other general oil-based formulations.
1986

B12-M02C **. Cataplasm, poultice**
Applying heat.
1986

B12-M02D **. Adhesive sheet, sticking plaster, bandage, gauze**
From 2006, the scope of this code has been extended to cover adhesive sheets in addition to sticking plasters and bandages. Also includes gauze. Excluding B12-M02C.
1986

B12-M02E **. Dusting powder**
Topical use only.
1986

B12-M02F **. Transdermal**
Administration of a drug through dermal or mucosal membrane. Includes microneedles.
1986

B12-M02G **. Gels/hydrogels**
2006

B12-M03 **Emulsion**

B12-M04 **Packaging material, apparatus**
This code is used in conjunction with only the 11-C, 11-C01, 11-C07, 11-C08 and 11-C09 sub-sections of B11.

B12-M05 **Pharmaceutical composition general**

B12-M06 **Preservative**

B12-M07 **Solution**

B12-M08 **Suppository**
Also includes pessaries.

B12-M09 **Surfactant**

B12-M10 **Controlled release general**

B12-M10A . **Sustained release general**
Active ingredient is gradually released over a period of time.
1986

B12-M10A1 .. **Osmotic pump**
Similar to a reservoir device but with an osmotic agent added (typically the active agent in salt form) which causes pressure generation that forces out the active agent.
2005

B12-M10A2 .. **Reservoir devices**
Active drug core encapsulated within a polymer film or coat through which it diffuses.
2005

B12-M10A3 .. **Multi-layer tablet**
Variation on the matrix device in which the matrix is coated so as to modify the hydration/swelling of the core and so reduce the surface area available for drug delivery.
2005

B12-M10A4 .. **Other matrix devices**
Drug is present as a dispersion within a polymer matrix, including clathrates. Also known as monolithic devices. Not used for the multi-layer tablet type (in which matrix is fully or partially coated) or for externally stimulated devices.
2005

B12-M10A5 .. **Pendant devices**
Active is bound to polymer, from which it is released by hydrolytic enzymes in the body.
2005

B12-M10A6 .. **Dual release devices**
Typically soft gelatin capsules designed to provide an initial burst of drug followed by a steady release of the remainder. Consists of an inner aqueous matrix and outer lipophilic matrix.
2005

B12-M10A7 .. **Nanotechnology devices**
Use of nanotechnology to deliver drugs to specific sites and control their release at that point. Includes quantum dots.
2005

B12-M10B . **Delayed release**
This term is usually associated with enterically coated tablets which prevent the contents from being released until a drug reaches the intestines.
1986

B12-M10C . **Rapid release**
2002

B12-M10D . **Pulsed release**
Active drug core coated with specific polymers and agents, where active is released in a “drug pulse” after a time lag.
2005

B12-M10E . **Site-specific release**
Drug bound to /or encased in a bio-polymer or other active substance in order to facilitate its transfer through the cell wall. This ensures the drug is delivered to the specific cells it needs to reach.
2005

B12-M10E1 .. **Using lipid-based systems**
A site-specific release form in which the drug is encased in a lipid-based system. These may include liposomes, solid lipid nanoparticles (SLNs), nanostructured lipid carriers (NLC) and hybrid nanoparticles.
2005

B12-M10E2 .. **Using antibodies**
A site-specific release form in which the drug is bound to an antibody.
2005

B12-M10E3 .. **Using nucleic acids**
A site-specific release form in which the drug is bound to nucleic acid.
2017

B12-M10E4 .. **Using protein/peptide**
A site-specific release form in which the drug is bound to a protein/peptide.
2019

B12-M10F . **Externally stimulated devices (e.g. electrically or ultrasonically)**
Any controlled release device in which the release of the drug is by an external stimulus. May be used in conjunction with other B12-M10 codes.
2005

B12-M11 **Tablets, capsules, pills etc. general**

B12-M11A . **Anticaking**
1986

B12-M11B . **Tablet (pressed)**
1986

B12-M11C . **Capsule**
Excluding microcapsule.
1986

B12-M11D . **Pellet, prill, granule, particle**
Excluding B12-M11B.
1986

B12-M11E . **Microcapsule**
Excluding B12-M11F.
1986

B12-M11F . **Liposomes/niosomes**
Includes non-ionic surfactant-based liposomes when site specific release is not mentioned. Includes micelles.
1986

B12-M11G . **Powder**
1986

B12-M11H . **Polymorphic form**
2010

B12-M11H1 .. **Special amorphous form**
2006
Previous code(s): B12-M11H

B12-M11H2 .. **Special crystal form**
2010
Previous code(s): B12-M11H

B12-M11J . **Effervescent formulation**
Includes effervescent tablets and effervescent granules.
1994

B12-M11K . **Tablet with two or more coating layers**
1994
Previous code(s): B12-M11B

B12-M11L . **Water-soluble formulation**
Includes water soluble tablets and water soluble granules.
2002

B12-M11M . **Chewable tablet**
2005

B12-M11N . **Microparticle**
2006

B12-M11P . **Lyophilized form**
Also includes freeze dried forms.
2006

B12-M11Q . **Nanoformulations**
2008

B12-M11Q1 .. **Nanoparticle**
2020

B12-M11Q2 .. **Nanoemulsion**
2020

B12-M11Q3 .. **Nanosuspension**
2020

B12-M11R . **Coated form general and other**
Tablets with two or more coating layers are coded under B12-M11K.
2009

B12-M11R1 .. **Coated capsules**
2009

B12-M11R2 .. **Coated microparticles**
2009

B12-M11R3 .. **Coated tablets**
2012

B12-M11S . **Foam formulation**
2011

B12-M11T . **Lozenge**
2014

B12-M11U . **Dual dosage forms**
E.g. tablet in capsule / pellet in capsule. To be searched alongside the B12 codes for each individual dosage component.
2016

B12-M11V . **Colloidal form**
May be searched with other code(s) from B12-M.
2016

B12-M11Z . **Pro-formulation**
Additional code to indicate the pro-form of a formulation e.g. pro-liposomes. Applied in conjunction with other B12-M11 codes.
2015

B12-M12 **MODE OF ADMINISTRATION**
2005

B12-M12A . **Buccal, sublingual**
2005

B12-M12B . **External, topical**
2005

B12-M12C . **Injection**
2005

B12-M12D . **Infusion**
2005

B12-M12E . **Intraarterial**
2005

B12-M12F . **Intravenous**
2005

B12-M12G . **Intraaural**
2005

B12-M12H . **Intraocular**
Includes intravitreal.
2005

B12-M12I . **Intratracheal**
2020

B12-M12J . **Intramuscular**
2005

B12-M12K . **Subcutaneous**
2005

B12-M12L . **Intrauterine, cervical**
2005

B12-M12M . **Intravaginal**
2005

B12-M12N . **Oral general**
2005

B12-M12O . **Intraosseous**
Administration directly into bone.
2020

B12-M12P . **Rectal general**
2005

B12-M12Q . **Intranasal**
2006

B12-M12R . **Intrathecal**
2012

B12-M12S . **Intraarticular**
2013

B12-M12T . **Intramedular**
Intramedular/intramedullary.
2013

B12-M12U . **Intraperitoneal**
2013

B12-M12V . **Epidural**
Mode of adminstration is through the spinal cord.
2015

B12-M12W . **Intravesical**
Injecting drugs directly to urinary bladder.
2017

B12-M12X . **Intratumoral**
2019

B12-M12Y . **Intracardiac**
Administration directly into the heart.
2020

B12-M12Z . **Specific treatment regime**
Includes sequential administration of drugs, tapered dosing regimes.
2011

B12-M14 **Suspensions, dispersions**
2005

B12-M15 **Film, sheet**
Includes laminates.
2005

B12-M16 **Prosthesis**
2005

B12-M17 **Surgical sponge, tampon**
2005

B12-M18 **Encapsulation**
2005

B12-M19 **Gene delivery methods**
2006

B12-M19A . **Gene delivery by viral methods**
2006

B12-M19B . **Gene delivery by non-viral methods**
2006

B12-M20 **Taste masking agent**
2007

B12-M21 **Absorbent, accelerator**
2007

B12-M22 **Formulations to prevent drugs from being abused**
2008

B12-N **PESTICIDES, FERTILISERS**

B12-N01 **Pesticides general**
1965-1993

B12-N02 **Insecticides**
1965-1993

B12-N03 **Lures, baits etc.**
1965-1993

B12-N04 **Molluscicide, slugicide**
1965-1993

B12-N05 **Rodenticide**
Including birds etc.
1965-1993

B12-N06 **Rodent repellent**
Including birds etc.
1965-1993

B12-N07 **Soil fumigants, sterilants and seed protectants**
1965-1993

B12-N08 **Soil improving (other than nutrients) synthetic growth media**
1965-1993

B12-N09 **Soil nutrients**
Inorganic, including trace elements.
1965-1993

B12-N10 **Soil nutrients (others)**
1965-1993

B12-P **PLANT GROWTH REGULANT TYPE**

B12-P01 **Plant growth regulants general**
1965-1993

B12-P02 **Defoliants, desiccants, chemical mowing**
1965-1993

B12-P03 **Fruit drop and set, thinning of fruit**
1965-1993

B12-P04 **Growth stimulants, phytohormones**
1965-1993

B12-P05 **Herbicide (total and general)**
1965-1993

B12-P06 **Herbicide (selective)**
1965-1993

B12-P07 **Moss, lichen controlling**
1965-1993

B12-P08 **Rooting cpds. (rhizogenes)**
1965-1993

B12-P09 **Sprouting inhibitors, seed germination inhibitors, growth inhibitors**
1965-1993

B12-P10 **Moisture conservation (mulches)**
1965-1993

B12-Q01 **TARGETED THERAPIES**
Includes pharmacogenomics, precision medicine, personalised medicine and theranostics.
2006

B12-Q01A **. Pharmacogenomics general**
2006

B12-R **FORMULATION SPECIFICALLY EXCLUDING ONE OR MORE COMPONENTS**
e.g. analgesic formulation specifically excluding aspirin. The component(s) excluded is/are not coded in sections B01-B10.
2009

B14 PHARMACEUTICAL ACTIVITIES

When a patent refers to a drug's mode of action and lists a number of activities associated with it, only the mode of action is coded.

When a patent refers to a class of diseases and then specifies only one preferred condition, both the general and specific disease codes should be applied.

B14-A **ANTIMICROBIALS**
1994

B14-A01 **Antibacterial general**
1994
Previous code(s): B12-A01

B14-A01A **. Gram-negative genera, general and other**
1994
Previous code(s): B12-A01

B14-A01A1 **.. Bordetella**
e.g. B. pertussis (causes whooping cough).
1994
Previous code(s): B12-A01

B14-A01A2 **.. Borrelia**
e.g. B. burgdorferi (causes Lyme disease).
1994
Previous code(s): B12-A01

B14-A01A3 **.. Escherichia**
e.g. E. coli.
1994
Previous code(s): B12-A01

B14-A01A4 **.. Mycoplasma**
e.g. M. pneumoniae, M. mycoides.
1994
Previous code(s): B12-A01

B14-A01A5 **.. Neisseria**
e.g. N. gonorrhoeae, N. meningitidis.
1994
Previous code(s): B12-A05

B14-A01A6 **.. Pseudomonas**
e.g. P. aeruginosa, P. mallei.
1994
Previous code(s): B12-A01

B14-A01A7 **.. Rickettsia**
e.g. R. prowazekii (causes typhus).
1994
Previous code(s): B12-A01

B14-A01A8 .. **Salmonella**
e.g. S. typhi (causes typhoid fever).
1994
Previous code(s): B12-A01

B14-A01A9 .. **Vibrio**
e.g. V. cholerae, V. parahemoliticus.
1994
Previous code(s): B12-A01

B14-A01B . **Gram-positive genera, general and other**
1994
Previous code(s): B12-A01

B14-A01B1 .. **Mycobacteria**
e.g. M.bovis, M. phlei.
1994
Previous code(s): B12-A01, B12-A03, B12-A04,

B14-A01B1A ... **M. tuberculosis**
2005

B14-A01B1B ... **M. leprae**
2005

B14-A01B2 .. **Streptococcus**
e.g. S. pyogenes, S. fecalis, S. pneumoniae (pneumococci), S. lactis.
1994
Previous code(s): B12-A01

B14-A01B3 .. **Streptomyces**
e.g. S. griseus, S. scabies.
1994
Previous code(s): B12-A01

B14-A01B4 .. **Staphylococcus**
e.g. S. aureus, S. epidermitidis.
1994
Previous code(s): B12-A01

B14-A01B5 .. **Bacillus**
e.g. B. anthracis, B. cereus
2006
Previous code(s): B14-A01B

B14-A01X . **Combating resistant bacteria**
This code is applied in conjunction with one or more codes from section B14-A01
2013

B14-A02 **Antiviral general**
1994
Previous code(s): B12-A06

B14-A02A . **DNA Viruses general and other**
1994
Previous code(s): B12-A06

B14-A02A1 .. **Adenovirus**
1994
Previous code(s): B12-A06

B14-A02A2 .. **Arbovirus**
This code is used for treatment of e.g. yellow fever or viral encephalitis.
1994
Previous code(s): B12-A06

B14-A02A3 .. **Herpesvirus**
e.g. cytomegalovirus, Epstein-Barr, chicken pox.
1994
Previous code(s): B12-A06

B14-A02A4 .. **Poxvirus**
Includes monkeypox.
1994
Previous code(s): B12-A06

B14-A02A5 .. **Hepatitis B virus**
1994
Previous code(s): B12-A06, B12-G02

B14-A02A6 .. **Papovavirus**
e.g. papilloma.
1994
Previous code(s): B12-A06

B14-A02A7 .. **Hepatitis C treatment**
Now coded as B14-A02B9.
2002-2014

B14-A02A8 .. **Hepatitis D treatment**
2002

B14-A02A9 .. **Parvovirus**
Includes treatment of “slapped cheek” syndrome.
2005

B14-A02B . **RNA Viruses general and other**
Includes Filoviridae e.g. Ebola virus and Marburg virus.
1994
Previous code(s): B12-A06

B14-A02B0 .. **Calcivirus**
e.g. norovirus, lagovirus, sapovirus, feline calcivirus
2014

B14-A02B1 .. **Retrovirus**
Including leuco- and oncoviruses, T-cell leukemia virus, HIV, Rous sarcoma. Non-antiviral AIDS treatment is coded B14-G01B.
1994
Previous code(s): B12-A06, B12-G05, B12-G07

B14-A02B2 .. **(Para/ortho)Myxovirus**
Including Influenza and mumps. In non-antiviral treatments other codes may be applied, e.g. antipyretic drug for treating ‘flu is coded B14-C04 only.
1994
Previous code(s): B12-A06

B14-A02B3 .. **Picornavirus**
Including entero-, rhino-, polio-, cold, hepatitis A. For hepatitis B see B14-A02A5. When treatment against cold is directed against symptoms, other codes may be applied, e.g. antiinflammatory drug for treating common cold is coded B14-C03 only.
1994
Previous code(s): B12-A06, B12-G02

B14-A02B4 .. **Rhabdovirus**
Including rabies.
1994
Previous code(s): B12-A06

B14-A02B5 .. **Coronavirus**
Including SARS, also coded as B14-K01D.
1994
Previous code(s): B12-A06

B14-A02B6 .. **Togavirus**
Including rubella.
1994
Previous code(s): B12-A06

B14-A02B7 .. **Reovirus**
e.g. rotavirus.
1994
Previous code(s): B12-A06

B14-A02B9 .. **Flavivirus**
Includes Yellow Fever virus, Japanese encephalitis virus, Dengue virus, Hepatitis C and G virus and West Nile virus. Prior to 201501, Hepatitis C virus was coded B14-A02A7.
2005

B14-A02X . **Combating resistant viruses**
This code is applied in conjunction with one or more codes from section B14-A02
2013

B14-A03 **Antiprotozoal general and other**
1994
Previous code(s): B12-B04

B14-A03A . **Amoebicide**
1994
Previous code(s): B12-B01

B14-A03B . **Antimalarial**
Plasmodium is the malarial parasite.
1994
Previous code(s): B12-B03

B14-A03C . **Coccidiostat**
Includes Eimeria and Isospora.
1994
Previous code(s): B12-B05

B14-A03D . **Trichomonicide, histomonicide**
1994
Previous code(s): B12-B04

B14-A03E . **Trypanocide**
i.e. sleeping sickness.
1994
Previous code(s): B12-B07

B14-A03F . **Other antiprotozoal**
2005

B14-A03X . **Combating resistant protozoa**
This code is applied in conjunction with one or more codes from section B14-A03.
2014

B14-A04 **Antifungal general and other**
1994

B14-A04A . **Aspergillus**
1994
Previous code(s): B12-A02C

B14-A04B . **Candida**
This organism commonly causes thrush.
1994
Previous code(s): B12-A02C

B14-A04C . **Trichophyton, Microsporum**
This code covers treatment of e.g. ringworm, tinea, athlete's foot.
1994
Previous code(s): B12-A02C

B14-A04X . **Combating resistant fungi**
This code is applied in conjunction with one or more codes from section B14-A04.
2013

B14-A05 **Antialgal**
1994
Previous code(s): B12-A02A

B14-B **PESTICIDES AND OTHER ANTIPARASITICS**
1994

B14-B01 **Pesticide general**
This code is applied only when type is unspecified or general.
1994
Previous code(s): B12-N01

B14-B02 **Antiparasitic general**
This code is applied only when type is unspecified or general.
1994
Previous code(s): B12-B04

B14-B02X . **Combating resistant parasites**
2020

B14-B03 **Vermicide, antihelmintic general and other**
1994
Previous code(s): B12-B02

B14-B03A . **Nematocide**
Including threadworm.
1994
Previous code(s): B12-B02

B14-B03B . **Schistosomicide**
1994
Previous code(s): B12-B06

B14-B03C . **Tapeworm**
1994
Previous code(s): B12-B02

B14-B03D . **Distomicide, other fluke**
2005

B14-B03X . **Combating resistant worms and helminths general**
This code is applied in conjunction with one or more codes from section B14-B03.
2018

B14-B04 **Arthropodicide general and other**
Includes crustacicide, arachnicide and millipede killing.
1994
Previous code(s): B12-N01

B14-B04A . **Acaricide**
Includes tickicides and miticides.
1994
Previous code(s): B12-B04

B14-B04B . **Insecticide general and other**
1994
Previous code(s): B12-N02

B14-B04B1 .. **Coleoptera**
Covers beetle killing.
1994
Previous code(s): B12-N02

B14-B04B2 .. **Dictyoptera**
Includes cockroach and termite killing.
1994
Previous code(s): B12-N02

B14-B04B3 .. **Diptera**
Includes house fly, mosquito and gnat killing.
1994
Previous code(s): B12-N02

B14-B04B4 .. **Ephemeroptera**
Includes mayfly killing.
1994
Previous code(s): B12-N02

B14-B04B5 .. **Hemiptera**
Includes aphid killing.
1994
Previous code(s): B12-N02

B14-B04B6 .. **Hymenoptera**
Includes bee, wasp and ant killing.
1994
Previous code(s): B12-N02

B14-B04B7 .. **Lepidoptera**
Covers butterfly and moth killing.
1994
Previous code(s): B12-N02

B14-B04B8 .. **Orthoptera**
Includes locust killing.
1994
Previous code(s): B12-N02

B14-B04B9 .. **Siphonaptera**
Includes flea killing.
1994
Previous code(s): B12-N02

B14-B04X . **Combating resistant arthropods**
This code is applied in conjunction with one or more codes from section B14-B04.
2013

B14-B05 **Arthropod repellent**
Covers insects, crustaceans, arachnids, millipedes, ticks and mites.
1994
Previous code(s): B12-L06

B14-B06 **Arthropod attractant**
Covers insects, crustaceans, arachnids, millipedes, ticks and mites. Including pheromones used as attractants.
1994
Previous code(s): B12-N03

B14-B07 **Arthropod sterilant**
Covers insects, crustaceans, arachnids, millipedes, ticks and mites.
1994
Previous code(s): B12-K03

B14-B08 **Antilichen**
1994
Previous code(s): B12-A02B

B14-B09 **Rodenticide**
1994
Previous code(s): B12-N05

B14-B10 **Avicide**
1994
Previous code(s): B12-N05

B14-B11 **Piscicide**
1994
Previous code(s): B12-N05

B14-B12 **Molluscicide**
Includes gastropodicides, slug, snail, bivalve and octopus killing.
1994
Previous code(s): B12-N04

B14-B13 **Animal repellent (other than insect)**
1994
Previous code(s): B12-N06

B14-B14 **Lures, baits (other than insect pheromones)**
1994
Previous code(s): B12-N03

B14-C **ANESTHETICS AND DRUGS RELIEVING FEVER, INFLAMMATION AND PAIN**
1994

B14-C01 **Analgesic**
This code is used when the action of the analgesic is very wide or unspecified. A more specific code is applied where possible, e.g. analgesic for treating dysmenorrhea only is coded under B14-N14 only.
1994
Previous code(s): B12-D01

B14-C02 **Antigout**
1994
Previous code(s): B12-D07, B12-G03

B14-C03 **Antiinflammatory general**
This code is used for treatment of general edema or inflammation. Specific inflammation treatments are coded elsewhere when possible e.g. Bronchitis is coded B14-K01 only, colitis as B14-E10C only etc..
1994
Previous code(s): B12-D07

B14-C04 **Antipyretic**
1994
Previous code(s): B12-D08

B14-C05 **Antihypothermia**
1994
Previous code(s): B12-D08

B14-C06 **Antirheumatic**
1994
Previous code(s): B12-D09

B14-C07 **General anesthetic**
1994
Previous code(s): B12-C01

B14-C08 **Local anesthetic**
1994
Previous code(s): B12-C02

B14-C09 **Antiarthritic general and other**
1994
Previous code(s): B12-D03

B14-C09A **. Osteoarthritis**
1994
Previous code(s): B12-D03

B14-C09B **. Rheumatoid-arthritis**
1994
Previous code(s): B12-D03

B14-D **HORMONAL, ANTIHORMONAL, ENZYME INHIBITORS**
*These codes also used for agonist/mimetic or receptor agonist/mimetic activities. **These codes also used for antagonist/inhibitor or receptor antagonist/inhibitor activities, e.g. aldosterone receptor antagonist is coded B14-D02A1. See B14-L for other (ant)agonist activities.
1994

B14-D01 **Hormonal general and other***
1994
Previous code(s): B12-G04

B14-D01A **. Androgenic***
1994
Previous code(s): B12-G04B

B14-D01B **. Estrogenic***
1994
Previous code(s): B12-G04C

B14-D01C **. Progestational***
1994
Previous code(s): B12-G04D

B14-D01D **. Other steroid***
1994
Previous code(s): B12-G04

B14-D01E **. Peptide hormone activity***
1994
Previous code(s): B12-G04

B14-D01E1 **.. Melanocortin agonist**
Adrenocorticotropic hormone agonist.
2005

B14-D01E2 **.. Melanin concentrating hormone agonist**
2005

B14-D01E3 **.. Glucagon-like peptide-1 (GLP-1) agonist**
2025

B14-D02 **Antihormonal general and other****
1994
Previous code(s): B12-G01A

B14-D02A **. Antisteroid general and other****
1994
Previous code(s): B12-G01A

B14-D02A1 **.. Antialdosterone****
1994
Previous code(s): B12-G01A

B14-D02A2 **.. Anticholesterol****
1994
Previous code(s): B12-H03

B14-D02A3 .. **Antiestrogenic**
This code also covers estrogenic antagonist/inhibitor activity and estrogen receptor antagonist/inhibitor activities.
2005

B14-D02A4 .. **Antiprogestational**
This code also covers progestational antagonist/inhibitor activity and progestational receptor antagonist/inhibitor activities.
2005

B14-D02A5 .. **Antiandrogenic**
This code also covers androgenic antagonist/inhibitor activity and androgen receptor antagonist/inhibitor activities.
2005

B14-D02A6 .. **Other antisteroid hormone**
This code also covers other steroid antagonist/inhibitor activity and other steroid receptor antagonist/inhibitor activities.
2005

B14-D02B . **Antipeptide hormone****
1994
Previous code(s): B12-G01A

B14-D02B1 .. **Melanocortin antagonist**
2005

B14-D02B2 .. **Melanin concentrating hormone antagonist**
2005

B14-D03 **Enzyme inhibitors general and other**
1994
Previous code(s): B12-G01B

B14-D04 **Coenzyme inhibitors**
1994
Previous code(s): B12-G01B

B14-D05 **Antioxidoreductases general and other**
1994
Previous code(s): B12-G01B1

B14-D05A . **Antioxidases**
1994
Previous code(s): B12-G01B1

B14-D05B . **Antiperoxidases**
1994
Previous code(s): B12-G01B1

B14-D05C . **Antioxygenases**
1994
Previous code(s): B12-G01B1

B14-D05D . **Antidehydrogenases, antireductases**
1994
Previous code(s): B12-G01B1

B14-D06 **Antitransferases general and other**
Includes HIV integrase inhibitor.
1994
Previous code(s): B12-G01B2

B14-D06A . **AntiDNA/RNA polymerase**
1994
Previous code(s): B12-G01B2

B14-D06B . **Antireverse transcriptase**
1994
Previous code(s): B12-G01B2

B14-D06C . **Antikinase**
2005

B14-D07 **Antihydrolases general and other**
1994
Previous code(s): B12-G01B3

B14-D07A . **Antiesterases**
Including lipase, nuclease, restriction enzyme, sulfatase, phosphatase inhibitors.
1994
Previous code(s): B12-G01B3

B14-D07A1 .. **Antiphosphodiesterases**
2005

B14-D07B . **Antiglycosidases**
Including amylase, cellulase, lactase inhibitors.
1994
Previous code(s): B12-G01B3

B14-D07C . **Antiproteases, antipeptide hydrolases**
Including chymotrypsin, trypsin, papain, fibrinolysin, renin, collagenase, elastase inhibitors. Renin inhibitor used as hypotensive is coded B14-F02B1 only.
1994
Previous code(s): B12-G01B3

B14-D07C1 .. **Antimetalloproteases**
2005

B14-D08 **Antilyases**
Including adenyl cyclase, (de)carboxylase, aldolase, dehydratase inhibitors.
1994
Previous code(s): B12-G01B4

B14-D09 **Antiisomerases**
Including racemase, tautomerase, epimerase, mutase inhibitors.
1994
Previous code(s): B12-G01B5

B14-D10 **Antiligases**
Including synthetase, some carboxylase inhibitors.
1994
Previous code(s): B12-G01B6

B14-E **DRUGS ACTING ON THE GASTROINTESTINAL SYSTEM**
1994

B14-E01 **Antacid**
1994
Previous code(s): B12-J03

B14-E02 **Antidiarrheal**
1994
Previous code(s): B12-J04

B14-E03 **Antiflatulent**
1994
Previous code(s): B12-J03

B14-E04 **Antihemorrhoidal**
1994
Previous code(s): B12-J04

B14-E05 **Antiemetic**
1994
Previous code(s): B12-D05

B14-E06 **Emetic**
1994
Previous code(s): B12-J06

B14-E07 **Gastric secretion inhibitor**
1994
Previous code(s): B12-J02

B14-E08 **Ulcer treatment (peptic, gastric, duodenal)**
Skin ulcers are coded B14-N17H.
1994
Previous code(s): B12-E08

B14-E09 **Laxative**
1994
Previous code(s): B12-J07

B14-E10 **Gastrointestinal dysfunction general and other**
1994
Previous code(s): B12-J01

B14-E10A . **Esophageal**
1994
Previous code(s): B12-J01

B14-E10B . **Gastric**
Includes gastritis.
1994
Previous code(s): B12-J01

B14-E10C . **Bowel**
Including irritable and inflammatory bowel (e.g. IBS).
1994
Previous code(s): B12-J01

B14-E10C1 .. **Inflammatory bowel conditions**
2005

B14-E10D . **Dysentery**
1994
Previous code(s): B12-B01, B12-A01, B12-A06, B12-J04, B12-J05

B14-E10E . **Gastrointestinal flora**
2008

B14-E11 **Anabolic, anorexia treatment general**
1994
Previous code(s): B12-J01

B14-E11A . **Anorexia**
2005

B14-E11B . **Cachexia**
Any general reduction in the vitality and/or strength of the body and/or mind as a result of a debilitating chronic illness.
2005

B14-E11C . **Malnutrition**
2005

B14-E11D . **Bulimia**
2005

B14-E12 **Anorectic, obesity treatment (appetite depressant)**
1994
Previous code(s): B12-J02

B14-F **DRUGS ACTING ON THE BLOOD AND CARDIOVASCULAR SYSTEM**
*These codes are also used for agonist/mimetic or receptor agonist/mimetic activities. **These codes are also used for antagonist/inhibitor or receptor antagonist/inhibitor activities. See section B14-L for other agonist/antagonist activities.
1994

B14-F01 **Cardioactive general and other**
1994
Previous code(s): B12-F01

B14-F01A . **Antiarrhythmic**
1994
Previous code(s): B12-F01A

B14-F01B . **Cardiac stimulant**
Including treatment of myocardial infarct, myocardial contraction intensifying, cardiotonic, cardiac arrest treatment, cardiac insufficiency treatment.
1994
Previous code(s): B12-F01B

B14-F01C . **Cardiac depressant**
1994
Previous code(s): B12-F01C

B14-F01D . **Antianginal**
1994
Previous code(s): B12-F02

B14-F01E . **Coronary dilator, coronary ischemia treatment**
1994
Previous code(s): B12-F02

B14-F01F . **Ganglion blocker**
1994
Previous code(s): B12-F03

B14-F01G . **Restenosis treatment**
2002

B14-F02 **Circulatory active general and other**
1994
Previous code(s): B12-E01

B14-F02A . **Hypertensive (calcium agonists)***
1994
Previous code(s): B12-F04

B14-F02B . **Hypotensive general and other**
1994
Previous code(s): B12-F05

B14-F02B1 .. **Angiotensin converting enzyme inhibitor, angiotensin antagonists****
This code covers renin inhibitors when used as hypotensives.
1994
Previous code(s): B12-F05A

B14-F02B2 .. **Calcium antagonists/entry blockers****
1994
Previous code(s): B12-F05B,B12-G01

B14-F02C . **Vasoconstrictor**
1994
Previous code(s): B12-F06

B14-F02D . **Vasodilator, general ischemia treatment**
1994
Previous code(s): B12-F07

B14-F02D1 .. **Cerebral ischemia treatment**
1994
Previous code(s): B12-F07,B12-C10

B14-F02D2 .. **Pulmonary ischemia treatment**
1994
Previous code(s): B12-K06

B14-F02E . **Lymphatic disease treatment**
1994
Previous code(s): B12-G03

B14-F02F . **Peripheral vascular disorder/angiogenic general**
2002

B14-F02F1 .. **Angiogenic**
2002

B14-F02F2 .. **Anti-angiogenic**
2002

B14-F02F3 .. **Peripheral vascular disorder**
2002

B14-F03 **Antianemic**
This code covers treatment of blood cell ratio imbalance.
1994
Previous code(s): B12-H01

B14-F04 **Anticoagulant, antiaggregants, thrombolytic**
1994
Previous code(s): B12-H02

B14-F05 **Reperfusion treatment**
1994

B14-F06 **Antilipemic**
1994
Previous code(s): B12-H03

B14-F06A . **Dyslipidemia**
2005

B14-F06B . **Hypertriglyceremia**
2011

B14-F07 **Antiarteriosclerotic**
Includes atherosclerosis.
1994
Previous code(s): B12-H03

B14-F08 **Coagulant**
1994
Previous code(s): B12-H04

B14-F09 **Hypoglycemic**
Treatment of diabetic symptoms is coded B14-S04.
1994
Previous code(s): B12-H05

B14-F10 **Hyperglycemic**
1994
Previous code(s): B12-H05

B14-F11 **Plasma and blood substitutes**
1994
Previous code(s): B12-H06

B14-G **DRUGS ACTING ON THE IMMUNE SYSTEM**
1994

B14-G01 **Immunostimulant general and other**
1994
Previous code(s): B12-A01,B12-A06

B14-G01A . **Interferon inducing**
This code is also used for agonist/mimetic or receptor agonist/mimetic activity.
1994
Previous code(s): B12-A06

B14-G01B . **AIDS treatment**
A drug which combats HIV is coded B14-A02B1.
1994
Previous code(s): B12-A06

B14-G02 **Immunosuppressant general and other** 1994

Previous code(s): B12-D02B

B14-G02A **. Antiallergic** 1994

Previous code(s): B12-D02

B14-G02B **. Antianaphylactic** 1994

Previous code(s): B12-D02D

B14-G02C **. Graft/transplant rejection treatment** 1994

Previous code(s): B12-D02B

B14-G02D **. Autoimmune disease treatment** 1994

Previous code(s): B12-D02A

B14-G03 **Immunomodulatory** 1994

Previous code(s): B12-A01,B12-A06,B12-D02B

B14-H **CANCER RELATED DRUGS**

Codes from sections B14-H01D - H01Z are now structured within the hierarchy B14-H01D to B14-H01L below. All document records containing codes introduced in 2005 will be changed to reflect the updated 2006 hierarchy and codes B14-H01M to B14-H01Z will no longer be searchable. 1994

B14-H01 **Anticancer general and other** 1994

Previous code(s): B12-G07

B14-H01A **. Leukemia treatment** 1994

Previous code(s): B12-G05

B14-H01B **. Antiproliferative, inhibitor of cell division, cytostatic** 1994

Previous code(s): B12-D07, B12-E08,B12-G07

B14-H01C **. Dermatological cancers** 2005

B14-H01D **. Endocrine cancers** 2005

B14-H01D1 **.. Breast cancers** 2005

B14-H01D2 **.. Thyroid cancers** 2005

B14-H01E **. Gastrointestinal cancers** 2005

B14-H01E1 **.. Colon cancers** 2005

B14-H01E2 **.. Esophageal cancers** 2005

B14-H01E3 **.. Gall bladder cancers** 2005

B14-H01E4 **.. Intestinal cancers** 2005

B14-H01E5 **.. Hepatic cancers** 2005

B14-H01E6 **.. Pancreatic cancers** 2005

B14-H01E7 **.. Rectal cancers** 2005

B14-H01E8 **.. Stomach cancers** 2005

B14-H01F **. Genitourinary cancers** 2005

B14-H01F1 **.. Cervical/uterine cancers** 2005

B14-H01F2 **.. Kidney cancers** 2005

B14-H01F3 **.. Ovarian cancers** 2005

B14-H01F4 **.. Prostate cancers** 2005

B14-H01F5 **.. Testicular cancers** 2005

B14-H01F6 **.. Bladder cancers** 2005

B14-H01G **. Immunological cancers** 2005

B14-H01G1 **.. Hodgkin's lymphoma** 2005

B14-H01G2 **.. Non-Hodgkin's lymphoma** 2005

B14-H01H **. Musculoskeletal cancers** 2005

B14-H01H1 **.. Osteocancers** 2005

B14-H01H2 **.. Sarcoma** 2005

B14-H01J **. Neurological cancers** 2005

B14-H01J1 **.. Brain tumours** 2005

B14-H01K **. Oral and respiratory cancers** 2005

B14-H01K1 **.. Buccal cavity and pharynx cancers** 2005

B14-H01K2 **.. Larynx cancers** 2005

B14-H01K3 **.. Lung cancers** 2005

B14-H01L . **Other cancers**
2005

B14-H01L1 .. **Multiple myelomas**
2005

B14-H02 **Mutagen, carcinogen**
1994
Previous code(s): B12-G07

B14-H03 **Apoptotic**
2002

B14-H04 **Anti-apoptotic**
2002

B14-H05 **Antiproliferative (non-cancerous)**
e.g. hyperplasia.
2006

B14-H06 **Tumor sensitizers**
Search when sensitizer type is not specified.
2008

B14-H06A . **Radiosensitizers**
Includes metalloptosis.
2016

B14-H06B . **Photosensitizers**
2016

B14-H06C . **Chemosensitizers**
2021

B14-H06D . **Sonosensitizers**
2023

B14-H07 **Hypoplasia and aplasia**
To be searched in the general case where the affected organ(s) are not specified.
2016

B14-H00X **Treatment resistant cancers**
To be applied in conjunction with other code(s) from B14-H where the cancer(s) to be treated are stated to be drug-, radiotherapy- and/or chemotherapy resistant.
2014

B14-J **DRUGS ACTING ON THE MUSCULAR AND NERVOUS SYSTEMS**
*These codes are also used for agonist/mimetic or receptor agonist/mimetic activities, e.g. dopamine receptor agonist is coded dopaminergic B14-J02C2.
**These codes are also used for antagonist /inhibitor or receptor antagonist/inhibitor activities.
1994

B14-J01 **CNS active general and other**
Covers terms such as cerebroprotective and neuroprotective.
1994
Previous code(s): B12-C10

B14-J01A . **Stimulants general and other**
1994
Previous code(s): B12-C06

B14-J01A1 .. **Antidepressant**
1994
Previous code(s): B12-C06

B14-J01A2 .. **Analeptic**
1994
Previous code(s): B12-C03

B14-J01A3 .. **Antiparkinsonian**
1994
Previous code(s): B12-C04

B14-J01A4 .. **Alzheimer's, Huntington's, senility, senile dementia, cognitive enhancer, antiamnesia, nootropics**
1994
Previous code(s): B12-C10,B12-G04A

B14-J01B . **Depressants general and other**
1994
Previous code(s): B12-C05

B14-J01B1 .. **Hypnotic**
1994
Previous code(s): B12-C07

B14-J01B2 .. **Sedative**
1994
Previous code(s): B12-C08

B14-J01B3 .. **Antipsychotic, neuroleptic, antischizophrenic**
1994
Previous code(s): B12-C10,B12-E02

B14-J01B4 .. **Tranquiliser, anxiolytic**
1994
Previous code(s): B12-C10

B14-J02 **Autonomic NS active general and other**
1994
Previous code(s): B12-E01

B14-J02A . **Parasympathetic stimulants, mimetics general and other***
1994
Previous code(s): B12-E05

B14-J02A1 .. **Cholinergic (acetyl choline potentiators)***
1994
Previous code(s): B12-E05

B14-J02A2 .. **Muscarinic***
1994
Previous code(s): B12-E05

B14-J02B . **Parasympathetic depressant, parasympatholytic general and other****
1994
Previous code(s): B12-E04

B14-J02B1 .. **Anticholinergic****
1994
Previous code(s): B12-E04

B14-J02B2 .. **Antimuscarinic****
1994
Previous code(s): B12-E04

B14-J02C . **Sympathetic stimulants general and other***
1994
Previous code(s): B12-E07

B14-J02C1 .. **Adrenergic, adrenaline potentiator (alpha and beta)***
1994
Previous code(s): B12-E07

B14-J02C2 .. **Dopaminergic***
1994
Previous code(s): B12-E07

B14-J02D . **Sympathetic depressants, sympatholytic general and other****
1994
Previous code(s): B12-E06

B14-J02D1 .. **Alpha-adrenergic blocker****
1994
Previous code(s): B12-E06A

B14-J02D2 .. **Beta-adrenergic blocker****
1994
Previous code(s): B12-E06B

B14-J02D3 .. **Antidopaminergic****
1994
Previous code(s): B12-E06

B14-J03 **Serotoninergic***
1994
Previous code(s): B12-G04

B14-J04 **Antiserotoninergic****
1994
Previous code(s): B12-G01

B14-J05 **Muscular active general and other (inotropic)**
1994
Previous code(s): B12-E02

B14-J05A . **Muscle relaxant (negatively inotropic)**
1994
Previous code(s): B12-E02

B14-J05B . **Mydriatic/myopic/hyperopic**
1994
Previous code(s): B12-E03

B14-J05C . **Muscle contractant (positively inotropic)**
1994
Previous code(s): B12-E02

B14-J05D . **Antispastic, antispasmodic, spasmolytic, spasm treatment**
1994
Previous code(s): B12-E02,B12-E04

B14-J05E . **Duchenne's muscular dystrophy treatment**
2002

B14-J06 **Convulsant**
1994
Previous code(s): B12-D10

B14-J07 **Anticonvulsant**
1994
Previous code(s): B12-D04

B14-K **DRUGS ACTING ON THE RESPIRATORY SYSTEM**
1994

B14-K01 **Respiratory active general and other**
Including anoxia, cystic fibrosis and bronchitis treatment.
1994
Previous code(s): B12-K06

B14-K01A . **Antiasthmatic**
1994
Previous code(s): B12-D02,B12-K02

B14-K01B . **Antitussive**
1994
Previous code(s): B12-K01

B14-K01C . **Bronchoconstrictor**
1994
Previous code(s): B12-K06

B14-K01D . **Bronchodilator**
1994
Previous code(s): B12-K02

B14-K01E . **Decongestant, expectorant, mucolytic**
From 2006, the scope of this code has been extended to cover decongestants in addition to expectorants and mucolytics.
1994
Previous code(s): B12-K05

B14-K01F . **Adult respiratory distress syndrome (ARDS)**
2002

B14-L **AGONISTS/MIMETICS AND ANTAGONISTS/INHIBITORS NOT COVERED ELSEWHERE**
The codes in this section are also used for drugs acting at the receptor, e.g. histamine receptor agonist is coded B14-L05.
1994

B14-L01 **Agonist/mimetic general and other**
1994

B14-L01A . **Enzyme agonist/mimetic**
2005

B14-L01A1 .. **Oxidoreductase agonist**
2007

B14-L01A2 .. **Transferase agonist**
2007

B14-L01A3 .. **Hydrolase agonist**
2007

B14-L01A4 .. **Lyase agonist**
2007

B14-L01A5 .. **Isomerase agonist**
2007

B14-L01A6 .. **Synthetase agonist**
2007

B14-L01B . **Cannabinoid agonist**
2006

B14-L01C . **PPAR agonist**
Peroxisome proliferator-activated receptor agonist.
2006

B14-L01D . **Nitric oxide agonist**
2007

B14-L02 **Angiotensin agonist/mimetic**
N.B. Angiotensin antagonists/inhibitors are coded B14-F02B1.
1994

B14-L03 **Interleukin agonist/mimetic**
1994

B14-L04 **Prostaglandin, leukotriene, thromboxane agonist/mimetic**
1994

B14-L05 **Histaminergic, histamine agonist/mimetic**
1994

B14-L06 **Antagonist, inhibitor, antimetabolite general and other**
1994
Previous code(s): B12-G01

B14-L06B . **Cannabinoid antagonist**
2006

B14-L06C . **PPAR antagonist**
Peroxisome proliferator-activated receptor antagonist.
2006

B14-L06D . **Nitric oxide antagonist**
2007

B14-L07 **Interleukin antagonist/inhibitor**
1994
Previous code(s): B12-G01

B14-L08 **Prostaglandin, leukotriene, thromboxane antagonist/inhibitor**
1994
Previous code(s): B12-G01

B14-L09 **Histamine antagonist/inhibitor general and other**
1994
Previous code(s): B12-D06

B14-L10 **H1 antagonist/inhibitor**
1994
Previous code(s): B12-D06B

B14-L11 **H2 antagonist/inhibitor**
1994
Previous code(s): B12-D06A

B14-L12 **Proton pump inhibitors**
2006
Previous code(s): B14-L06

B14-M **ANTIDOTES**
1994
Previous code(s): B12-J05

B14-M01 **Antidote general and other**
To be searched for treating chronic and habitual conditions: treating acute intoxication is searched under B14-M03.
1994
Previous code(s): B12-J05

B14-M01A . **Alcoholism treatment**
1994
Previous code(s): B12-J05A

B14-M01A1 .. **Alcoholism treatment using replacement therapy**
2009

B14-M01B . **Antismoking**
1994
Previous code(s): B12-J05B

B14-M01B1 .. **Antismoking treatment using replacement therapy**
e.g. nicotine replacement patches and gum
2009

B14-M01C . **Antidrug addiction**
Excluding addiction to nicotine and alcohol.
1994
Previous code(s): B12-J05

B14-M01C1 .. **Drug addiction treatment using replacement therapy**
e.g. methadone treatment
2009

B14-M01D . **Antiheavy metal poisoning**
1994
Previous code(s): B12-J05C

B14-M01E . **Pesticide/herbicide antidote**
Includes herbicide safeners prior to 2009.
1994
Previous code(s): B12-J05D

B14-M01F . **Protecting plants from poisons**
1994-2015

B14-M02 **Pharmaceutical antidote general**
2006

B14-M02A . **Chemoprotectant**
2006

B14-M02B **. Radioprotectant**
2006

B14-M03 **Recreational drug antidote general and unspecified**
To be searched for treating acute intoxication, treating chronic conditions is searched under B14-M01.
2016

B14-M03A **. Sobering agent for acute alcohol intoxication**
2016

B14-M03B **. Antidote for acute recreational drug intoxication other than alcohol**
2016

B14-N **ORGANS**
1994

B14-N01 **Bone disorder treatment, osteoporosis**
1994
Previous code(s): B12-J08

B14-N01A **. Osteoporosis**
2005

B14-N01B **. Fractures, disorders of healing and osteogenesis**
2005

B14-N02 **Ear disorder treatment**
1994
Previous code(s): B12-L04

B14-N02A **. Balance related disorder and vestibular disorder**
2008

B14-N03 **Eye disorder treatment**
1994
Previous code(s): B12-L04

B14-N03A **. Glaucoma**
2005

B14-N04 **Nose disorder treatment**
1994
Previous code(s): B12-L04

B14-N05 **Mouth/throat disorder treatment**
1994
Previous code(s): B12-L04

B14-N05A **. Mouth disorder**
E.g. cold sores and xerostomia (chronic dry mouth).
2005

B14-N05B **. Throat disorder**
Covers throat disorders but excludes disorders of the esophagus.
2005

B14-N06 **Dental general and other**
1994
Previous code(s): B12-L03

B14-N06A **. Anticaries/antiplaque**
1994
Previous code(s): B12-A01,B12-L03

B14-N06B **. Periodontal**
Includes gingivitis.
1994
Previous code(s): B12-L03,B12-L04

B14-N07 **Urogenital/anorectal disease treatment general and other**
1994
Previous code(s): B12-A05, B12-D07, B12-G03, B12-G04

B14-N07A **. Prostate**
1994
Previous code(s): B12-G03,B12-G04

B14-N07B **. Cystitis**
1994
Previous code(s): B12-D07

B14-N07C **. Venereal**
1994
Previous code(s): B12-A05

B14-N07D **. Incontinence treatment**
1994
Previous code(s): B12-G03

B14-N08 **Diuretic**
1994
Previous code(s): B12-G03

B14-N09 **Antidiuretic**
1994
Previous code(s): B12-G03

B14-N10 **Kidney**
1994
Previous code(s): B12-G03

B14-N11 **Thyroid**
1994
Previous code(s): B12-G06

B14-N12 **Liver**
1994
Previous code(s): B12-G02

B14-N13 **Pancreas**
1994
Previous code(s): B12-G02

B14-N14 **Uterus**
Premenstrual syndrome and dysmenorrhea are covered here but labour inducing drugs are coded with abortifacients under B14-P01B.
1994
Previous code(s): B12-E09

B14-N15 **Spleen**
1994
Previous code(s): B12-G02

B14-N16 **Brain and spinal cord**
Including stroke, meningitis, encephalitis and other prion type diseases.
1994
Previous code(s): B12-C10,B12-E01

B14-N16A **. Bovine spongiforme encephalopathy (BSE, "Mad cow disease")**
2002

B14-N16B **. Creutzfeld Jakob disease (CJD)**
2002

B14-N16C **. Kuru**
2005

B14-N16D **. Scrapie**
A fatal degenerative disease affecting the CNS of sheep and goats.
2005

B14-N17 **Skin treatment general and other**
Fungal skin diseases are coded under B14-A04.
1994
Previous code(s): B12-A07

B14-N17A **. Burn**
1994
Previous code(s): B12-A07

B14-N17B **. Wound other (physical trauma)**
1994
Previous code(s): B12-A07

B14-N17C **. Psoriasis, dermatitis**
1994
Previous code(s): B12-A07

B14-N17D **. Acne**
1994
Previous code(s): B12-A07

B14-N17E **. Dandruff and seborrhoea**
2005

B14-N17F **. Antiscarring**
2005

B14-N17G **. Pruritis**
2008

B14-N17H **. Dermal ulcers**
Also includes cold sores, which are additionally coded with B14-A02A3.
2019

B14-N18 **Mammary gland**
Including mastitis.
2002

B14-N19 **Nail disease treatment**
Fungal nail diseases also search under B14-A04.
2020

B14-P **DRUGS ACTING ON THE REPRODUCTIVE SYSTEM**
1994

B14-P01 **Contraceptive general and other**
1994
Previous code(s): B12-K03

B14-P01A **. Male, spermicide**
1994
Previous code(s): B12-K03

B14-P01B **. Female, abortifacient, antiovulatory**
1994
Previous code(s): B12-K03

B14-P02 **Infertility treatment**
1994

B14-P03 **Antiabortive**
1994
Previous code(s): B12-E09

B14-P04 **Sexual dysfunction**
Sexual dysfunction general.
2006

B14-P04A **. Male sexual dysfunction**
2006

B14-P04B **. Female sexual dysfunction**
2006

B14-P05 **Menopause/andropause and related symptoms**
To be searched for general references to menopause or andropause where precise hormones affected are not specified. Also may be searched in conjunction with other B14 codes where a condition is specifically attributed to menopause or andropause in the original document e.g. hot flashes.
2016

B14-R **COSMETICS**
1994
Previous code(s): B12-L02

B14-R01 **Cosmetic general and other**
1994
Previous code(s): B12-L02

B14-R02 **Hair preparation**
1994
Previous code(s): B12-L05

B14-R03 **Antiperspirant**
1994
Previous code(s): B12-L01

B14-R04 **Perfume**
1994
Previous code(s): B12-L07

B14-R05 **Sunscreen agent**
1994
Previous code(s): B12-L08

B14-S **MISCELLANEOUS ACTIVITY TERMS**
1994

B14-S01 **Multiple sclerosis treatment, demyelinating diseases**
1994
Previous code(s): B12-E01

B14-S02 **Dwarfism treatment**
1994
Previous code(s): B12-G04

B14-S03 **Gene therapy general**
1994

B14-S03A . **Gene therapy**
2002

B14-S03B . **Antisense therapy**
2002

B14-S03C . **RNA interference**
2005

B14-S03D . **shRNA Interference**
2008

B14-S04 **Diabetes**
This code is used when a drug targets the symptoms and associated disorders. Hypoglycemia is coded B14-F09.
1994
Previous code(s): B12-H05

B14-S04A . **Type II diabetes**
Also known as adult onset diabetes or non-insulin dependent diabetes.
2005

B14-S05 **Shock treatment general (excluding anaphylactic)**
Anaphylactic shock is coded B14-G02B.
1994
Previous code(s): B12-A07

B14-S06 **Toxic (septic) shock**
1994
Previous code(s): B12-A01,B12-A06

B14-S07 **Traumatic shock**
1994
Previous code(s): B12-C10

B14-S08 **Antioxidant/free radical scavenger**
1994

B14-S09 **Synergist**
1994
Previous code(s): B12-C09

B14-S10 **Cot death**
1994

B14-S11 **Vaccine general**
1994
Previous code(s): B02-V02

B14-S11A . **Antiviral vaccine**
1994
Previous code(s): B02-V02

B14-S11B . **Other antimicrobial vaccine**
e.g. antibacterial vaccine.
1994
Previous code(s): B02-V02

B14-S11B1 .. **Antibacterial vaccine**
2005

B14-S11B2 .. **Antiprotozoal vaccine**
2005

B14-S11B3 .. **Antiparasitic vaccine**
2005

B14-S11C . **Anticancer vaccine**
1994
Previous code(s): B02-V02

B14-S11D . **Vaccine type**
2005

B14-S11D1 .. **Whole-killed (inactive) vaccine**
2005

B14-S11D2 .. **Live-attenuated (weakened) vaccine**
2005

B14-S11D3 .. **Synthetic/genetically engineered vaccine**
2005

B14-S11E . **Therapeutic vaccine other**
Vaccine other than antimicrobial or anticancer e.g. immunocontraceptive or antiasthma vaccine. Unspecified vaccines should be searched under the general code B14-S11.
2015

B14-S11F . **Vaccine adjuvants general**
This code is also searched when three or more specific subcodes would be applied.
2023

B14-S11F1 .. **Aluminum adjuvants**
2023

B14-S11F2 .. **Freund's adjuvants**
2005

B14-S11F3 .. **Squalene based adjuvants**
2023

B14-S11F4 .. **Vitamin E/tocopherol based adjuvants**
2023

B14-S11F5 .. **Saponin based adjuvants**
2023

B14-S11F6 .. **Other adjuvants**
2023

B14-S12 **Veterinary**
Applied with other activity code(s) to indicate specific veterinary as opposed to medical use.
1994
Previous code(s): B12-L09

B14-S13 **Metabolic disorders**
Includes enzyme deficiencies and conditions arising from such.
2005

B14-S13A **. Acidosis**
2005

B14-S14 **Joint disorders general**
Includes conditions affecting tendons and bursa.
2005

B14-S14A **. Cartilage and connective tissue disorders**
2009

B14-S14B **. Soft tissue disorders**
2009

B14-S15 **Broad formulation**
Patent is concerned with the formulation type rather than the drugs contained in it.
2005

B14-S16 **Many diseases treated**
More than 15 diseases are said to be treated. Specific codes for the individual disease are still included.
2005

B14-S18 **Drug combination**
Used when specific combination of drugs is claimed.
2006

B14-S20 **Genetic disorder**
2006

B14-S20A **. Chromosomal abnormality disorder**
2006

B14-S20B **. Fabry disease**
2015

B14-S20C **. Hunter syndrome**
2015

B14-S21 **Cell therapy**
2006

B14-S21A **. Stem cell therapy**
2023

B14-S21B **. CAR T-cell therapy**
2023

B14-S22 **Prophylaxis**
Used only when a compound or formulation is solely for prophylaxis or prevention of a disorder.
2009

B14-S23 **Unspecified activity**
Prior to 2010, this code covered only Chinese medicine documents with no specific Western-style diseases mentioned as being treated. Applied to documents when a pharmaceutical formulation/ substance with pharmaceutical activity is claimed, but no specific disorders are mentioned as being treated, I.e., when no other activity codes can be applied.
2009

B14-S24 **Pediatrics/geriatrics**
Includes treatment for adolescents.
2009

B14-S25 **Chemotherapy**
2010

B14-S26 **Radiotherapy**
2010

B14-S27 **Electromagnetic therapy**
Includes ultrasound, sonodynamic therapy and phototherapy using high energy photons. Also includes electrical stimulation.
2010

B14-S28 **Prodrugs**
Applied only when the prodrug is the novelty of the invention.
2012

B14-Y **GREEN TECHNOLOGY**
Used when processes/productions are kinder to the environment. Also includes environmentally friendly apparatus.
2006

B14-Z **GREEN FORMULATION**
Used when formulations are kinder to the environment. Includes biodegradable.
2012

B15 VITAMINS (from 201101)

Note that for structurally modified vitamins the suffix A is appended to the relevant parent code. The following compounds although having vitamin activity, are indexed under the appropriate chemical classification only: nicotinic acid (B07-D04+), pantothenic acid (B10-C04D), folic acid (B06-D09), choline (B10-A22), inositol (B10-E04A), biotin (B06-F03), p-amino-benzoic acid (B10-B02A), linoleic acid (B10-C04E2) and other unsaturated acids.

B15-A **A VITAMINS**

B15-A00 **Vitamin A and carotenoids**
previously coded B03-A
2011

B15-A00A **. Modified vitamin A and carotenoids**
2011

B15-B **B VITAMINS**

B15-B00 **B vitamins general**
2011

B15-B00A **. Modified B vitamins general**
2011

B15-B01 **Vitamin B1 (thiamine)**
previously coded B03-B
2011

B15-B01A **. Modified vitamin B1 (thiamine)**
2011

B15-B02 **Vitamin B2 (riboflavin)**
previously coded B03-C
2011

B15-B02A **. Modified vitamin B2 (riboflavin)**
2011

B15-B06 **Vitamin B6 (pyridoxine)**
previously coded B03-D
2011

B15-B06A **. Modified vitamin B6 (pyridoxine)**
2011

B15-B12 **Vitamin B12 and cobalamine**
previously coded B03-E
2011

B15-B12A **. Modified vitamin B12 and cobalamine**
2011

B15-C **C VITAMINS**

B15-C00 **Vitamin C (ascorbic acid)**
previously coded B03-F
2011

B15-C00A **. Modified vitamin C (ascorbic acid)**
2011

B15-D **D VITAMINS**

B15-D00 **D vitamins general**
previously coded B03-G
2011

B15-D00A **. Modified D vitamins general**
2011

B15-D01 **Vitamin D1**
2011

B15-D01A **. Modified vitamin D1**
2011

B15-D02 **Vitamin D2**
2011

B15-D02A **. Modified vitamin D2**
2011

B15-D03 **Vitamin D3**
2011

B15-D03A **. Modified vitamin D3**
2011

B15-D04 **Vitamin D4**
2020

B15-D04A **. Modified vitamin D4**
2020

B15-D05 **Vitamin D5**
2020

B15-D05A **. Modified vitamin D5**
2020

B15-E **E VITAMINS**

B15-E00 **Vitamin E, tocopherols, tocotrienols**
Includes tocodienols and tocotrienols.
previously coded B03-H
2011

B15-E00A **. Modified vitamin E and tocopherols**
2011

B15-K **K VITAMINS**

B15-K00 **K vitamins general**
previously coded B03-J
2011

B15-K00A **. Modified K vitamins general**
2011

B15-K01 **Vitamin K1**
2011

B15-K01A **. Modified vitamin K1**
2011

B15-K02 **Vitamin K2**
2011

B15-K02A **. Modified vitamin K2**
2011

B15-K03	**Vitamin K3**	**2016**
B15-K03A	**. Modified vitamin K3**	**2016**
B15-K04	**Vitamin K4**	**2016**
B15-K04A	**. Modified vitamin K4**	**2016**
B15-K05	**Vitamin K5**	**2011**
B15-K05A	**. Modified vitamin K5**	**2011**
B15-K06	**Vitamin K6**	**2017**
B15-K06A	**. Modified vitamin K6**	**2017**
B15-K07	**Vitamin K7**	**2020**
B15-K07A	**. Modified vitamin K7**	**2020**
B15-P	**P VITAMINS**	
B15-P00	**Vitamin P** *previously coded B03-K*	**2011**
B15-P00A	**. Modified vitamin P**	**2011**
B15-X	**PROVITAMINS**	**2011**
B15-Z	**GENERAL OR UNSPECIFIED VITAMINS** *previously coded B03-L*	**2011**

C:
AGRICULTURAL CHEMICALS

C01 Steroids
C02 Antibiotics *(Vaccines pre-1994, see C14-S11 from 1994)*
C03 Vitamins *(pre-2011, see C15 from 201101)*
C04 Natural Products (or Genetically Engineered), Polymers
C05 Miscellaneous
C06 Heterocyclics, Fused Ring
C07 Heterocyclics, Mononuclear
C08 Aromatics, Polycarbocyclic
C09 Alicyclics, Polycarbocyclic
C10 Aromatics and Cycloaliphatics (Mono- and Bicyclic only), Aliphatics
C11 Processes, Apparatus
C12 Diagnostics and Formulation Types *(Therapeutic, Pesticidal, Herbicidal pre-1994)*
C14 Agricultural Activities
C15 Vitamins *(from 201101)*

C: AGRICULTURAL CHEMICALS

Before 1994 section C codes were generated by replacing "B" letter in Pharmaceuticals by "C". The notes referring to "B" codes applied equally to "C" codes in Agricultural Chemicals unless stated otherwise. A compound is normally assigned only one code from sections C01 to C10 according to the priority rule of C01 before C02 etc.

Compounds of known structure are always coded according to chemical structure in C05 to C10 and C15. However, steroids, antibiotics, vitamins and natural products (and their derivatives) are coded respectively in C01, C02, C03/C15 and C04 unless stated otherwise (see C03/15, C03-J, C03-K, C04-A07A, C04-A07E for exclusions).

The code commenced in 1963 for Pharmaceuticals (Farmdoc) and 1965 for Agricultural Chemicals (Agdoc).

C01 STEROIDS

This section covers all compounds containing the basic steroidal nucleus (cyclopentanophenanthrene ring), which may have other rings (carbocyclic or heterocyclic) fused onto it. Compounds which contain heteroatoms within the basic cyclopentanophenanthrene ring (e.g. azasteroids) are excluded. Homosteroids (containing extra carbon in the ring), norsteroids (missing one carbon in the ring) and secosteroids (bonds broken, e.g. vitamin D) are also excluded. Steroids of unknown structure are also coded under C04-B02D: (before 1994) or C04-J02 (after 1994). All groups listed include derivatives. Thus hydroxy includes ethers, esters and cyclic derivatives (linked via an oxygen atom to a steroid carbon atom). All the compound types listed may contain additional substituents, provided that they are not specified for an earlier occurring code.

Conventions used

1 Steroids containing thio-groups (e.g. mercapto or thione), are assigned the same code as the corresponding oxygen containing compounds.

2 17, 20 and 21 hydroxy include all cyclic derivatives linked via -O- to 17, 20 or 21, provided these are not linked via atoms other than O(S) to 17, 20 or 21 positions.

3 3, 17 and 20 ketone include oxime, hydrazone etc., hemi-ketal, ketal (including those cyclic derivatives which satisfy convention (2)).

4 In deciding precedence, the highest priority is given to the lowest number.

5 'Y' represents 2-4 carbon chain (including Z), but includes cyclic derivatives only when they satisfy conventions (2) or (3).

6 'Z' represents hydroxyacetyl or 1,2-di-hydroxyethyl (specific subset of Y).

C01-A	**1,3,5(10)-TRIENES**
C01-A01	**Estrones (3-ol, 17-one)**
C01-A02	**Estradiols (3,17-diol)**
C01-A03	**Other 1,3,5(10)-trienes**
C01-B	**RING 'A' DIENES**
C01-B01	**Prednisones (3,11-dione; 17-ol; 17-Z)**

C01-B02	**Prednisolones (3-one; 11,17-diol; 17-Z)**
C01-B03	**Other 1,4-dienes**
C01-B04	**Other ring 'A' dienes**
C01-C	**RING 'A' MONOENES**
C01-C01	**Cortisones (3,11-dione; 17-ol; 17-Z)**
C01-C02	**Cortisols (3-one; 11,17-diol; 17-Z)**
C01-C03	**17-hydroxylprogesterones (3-one; 17-acetyl)**
C01-C04	**Progesterones (3-one; 17-acetyl)**
C01-C05	**Testosterones (3-one; 17-ol)**
C01-C06	**Pregn(3 or 4)enes (17-Y)**
C01-C07	**Pregn(1 or 2)enes (17-Y)**
C01-C08	**Pregn(5(10) or 1(10))enes (17-Y)**
C01-C09	**Androst(3 or 4)enes**
C01-C10	**Androst(1 or 2)enes**
C01-C11	**Androst(5(10) or 1(10))enes**
C01-D	**SATURATED RING 'A'**
C01-D01	**Pregnanes (17-Y)** Including cardenolides and digoxin.
C01-D02	**Androstanes**
C01-E	**STEROIDS NO STRUCTURE**
C01-E	**Steroids no structure** Non-structural steroids other than steroid hormones e.g. plant sterols. *Previous code(s) : C04-J02* **2010**

C02 ANTIBIOTICS (Vaccines pre-1994, see C14-S11 from 1994)

Antibiotics are coded using the first letter of the parent antibiotic (where this is known or given), for example, dihydrostreptomycin is coded C02-S, chlortetracycline C02-T and adriamycin (doxorubicin) C02-D. Un-named or general antibiotics are coded C02-Z. Vaccines, anti-toxins used as vaccines etc. are coded C02-V02 (before 1994) and C14-S11+ (from 1994). "C" and "P" antibiotics including cephalosporins and penicillins are subdivided further. All antibiotics are covered in this section even if they are not being used for their antibiotic properties.

C02-C	**"C" ANTIBIOTICS, GENERAL**
C02-C	**General**
C02-C01	**"C" antibiotics other than cephalosporins** **1977**
C02-C02	**Ring modified cephalosporins** This code covers cephalosporins with no -(CH2)X (X=H or substituent) at 3-position, or two substituents at 7-position. **1977**
C02-C03	**Other 3 unsubstituted methyl, 7-monosubstituted cephalosporins** **1977**
C02-C04	**Other 7-monosubstituted cephalosporins** Including lactones. **1977**
C02-P	**"P" ANTIBIOTICS, GENERAL**
C02-P	**General**
C02-P01	**"P" antibiotics other than penicillins** **1977**
C02-P02	**6-acetamidopenicillins, alpha-substituted by N-atom** **1977**
C02-P03	**Other 6-acetamidopenicillins** **1977**
C02-P04	**Other penicillins** With beta-lactam ring with 6 position substituted by group other than acetamide **2012**
C02-V	**"V" ANTIBIOTICS, VACCINES (PRE-1994)**
C02-V	**General** **1965-1993**

C02-V01 **"V" Antibiotics**
1986

C02-V02 **Vaccines**
Excluding interferon. The code C12-A06 for antiviral is not additionally searchable.
1986-1993
Now coded as: C14-S11+

C02-V03 **Interferon**
Not additionally searchable as polypeptide C04-C01+.
1986-1993
Now coded as: C04-H05+

C02-Z **"Z" ANTIBIOTICS, GENERAL**

C02-Z **General**

C02-Z01 **Z antibiotics general**
2022

C03 VITAMINS (retired end 2010, coded in C15 from 201101)

Each sub-group includes related compounds with similar activity, and pro-vitamins. The following compounds although having vitamin activity, are indexed under the appropriate chemical classification only: nicotinic acid (C07-D04+), pantothenic acid (C10-C04D), folic acid (C06-D09), choline (C10-A22), inositol (C10-E04A), biotin (C06-F03), p-amino-benzoic acid (C10-B02A), linoleic acid (C10-C04E2) and other unsaturated acids.

C03-A **A and carotenoids**
now coded C15-A00+
retired end 2010

C03-B **B1 (thiamin)**
now coded C15-B01+
retired end 2010

C03-C **B2 (riboflavin)**
now coded C15-B02+
retired end 2010

C03-D **B6 (pyridoxine)**
now coded C15-B06+
retired end 2010

C03-E **B12 and cobalamine**
now coded C15-B12+
retired end 2010

C03-F **C (ascorbic acid)**
now coded C15-C00+
retired end 2010

C03-G **D (calciferol)**
now coded C15-D00+
retired end 2010

C03-H **E and tocopherols**
now coded C15-E00+
retired end 2010

C03-J **Vitamin K**
This code is applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only.
now coded C15-K00+
retired end 2010

C03-K **Vitamin P and others**
This code is applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only.
now coded C15-P00+
retired end 2010

C03-L **General**
now coded C15-Z00
retired end 2010

C04 NATURAL PRODUCTS (OR GENETICALLY ENGINEERED), POLYMERS

In general, natural products are coded according to their most descriptive feature (usually chemical), thus (i) milk is coded C04-B04K only, and not also C04-B04G (gland extract) or C04-B04L (mammalian extract); (ii) a polysaccharide obtained from a plant is coded C04-C02D only, and not also C04-A07F.

The following compounds and their derivatives are coded in C04 only, and not also according to their chemical structure:- tropanes, scopolamine, quinine, quinidine, lysergic acid, morphine, yohimbanes, xanthines, rotenone, pyrethroids, gibberellins, nucleosides and nucleotides, prostaglandins.

If a compound's structure or activity suggest it may be a natural product analogue it is coded in C04 and structurally.

To distinguish between specifically genetically engineered products and those prepared by other methods, the E suffix (engineered) is appended to codes introduced from 1994 in the appropriate format. For example interleukin 6 prepared by exogenous gene expression in a host is coded C04-H02G0E. All codes which have genetically engineered equivalents are marked #.

C04-A ALKALOIDS, PLANT EXTRACTS

C04-A01 **Belladonna**
Including tropanes and scopolamines.

C04-A02 **Cinchona**
Including quin(id)ines.

C04-A03 **Ergot**
Including lysergic acid.

C04-A04 **Opium**
Including morphines and morphinans from 198601 but excluding apomorphine.

C04-A05 **Rauwolfia**
Including yohimbanes.

C04-A06 **Xanthines**
i.e. 2,6-dioxopurines.

C04-A07A **. Other alkaloids**
This code is applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only, e.g. strychnine is coded C06-E05, vincamine C06-D18.
1965

C04-A07A1 **.. Vinca alkaloids**
Includes vincristine, vinblastine, vinorelbine and vindesine.
Previous code(s) : C06-D18
2010

C04-A07B **. Derris**
e.g. rotenone.
1965

C04-A07C **. Pyrethrins**
1965

C04-A07D **. Peat, straw, cereal, seeds, bran, whole plants, juice**
1965-1993
Now coded as: C04-A08, C04-A09

C04-A07D1 **.. Peat, humic acid**
1986-1993
Now coded as: C04-A09J

C04-A07D2 **.. Seeds, husks from seeds, seedmeal, cereal, grain**
1986-1993
Now coded as: C04-A09F

C04-A07D3 **.. Wood shavings, bark, sawdust**
1986-1993
Now coded as: C04-A09G

C04-A07D4 **.. Grass, straw, hay, plant stems, sap produced by pressing**
Excluding C04-A07D3.
1986-1993
Now coded as: C04-A09H

C04-A07D5 **.. Whole plants, leaves, whole mushrooms, flowers, plants produced by tissue culture**
Excluding C04-A07D4. C11-A is also coded.
1986-1993
Now coded as: C04-A08+, C04-A09A, C04-A09B, C04-A09D

C04-A07E **. Glycosides, saponins**
This code is applied only when a general term is used in a patent. Any specific compounds in this class are coded by structure only, e.g. glycyrrhizin is coded C07-A02B. Includes steroidal saponins.
1965

C04-A07F **. Plant extract general**
1965-1993
Now coded as: C04-A10

C04-A07F1 .. **Mushrooms, toadstools extracts**
1986-1993
Now coded as: C04-A10A

C04-A07F2 .. **Other plant extracts**
1986-1993
Now coded as: C04-A10B+, C04-A09C

C04-A08 # **Plant divisions and whole plants general and other**
E suffix is appended to respective whole plant codes for transgenic plants. N.B. Plant cells and plant tissue are coded C04-F08.
1994
Previous code(s): C04-A07D

C04-A08A # . **Bryophytes**
e.g.liverworts and mosses.
1994
Previous code(s): C04-A07D5

C04-A08A1 # .. **Marchantiophyta (liverworts)**
2012

C04-A08A2 # .. **Bryophyta (mosses)**
2012

C04-A08A3 # .. **Anthocerotophyta (hornworts)**
2012

C04-A08B # . **Pteridophytes**
e.g.ferns.
1994
Previous code(s): C04-A07D5

C04-A08B1 # .. **Psilotopsida**
2012

C04-A08B2 # .. **Equisetopsida**
2012

C04-A08B3 # .. **Marattiopsida**
2012

C04-A08B4 # .. **Polypodiopsida**
2012

C04-A08C # . **Spermatophytes**
1994-2011
Previous code(s): C04-A07D5

C04-A08C1 # .. **Gymnosperms**
e.g. conifers.
1994-2011
Previous code(s): C04-A07D5, now coded as C04-A08F+

C04-A08C2 # .. **Angiosperms**
e.g. flowering plants, grass, dicotyledons and monocotyledons.
1994-2011
Previous code(s): C04-A07D5, now coded as C04-A08G+

C04-A08D # . **Fungi (higher)**
e.g. mushrooms, toadstools, but not unicellular or microscopic fungi.
1994
Previous code(s): C04-A07D5

C04-A08D1 # .. **Ascomycota**
2012

C04-A08D2 # .. **Basidiomycota**
2012

C04-A08F # . **Gymnosperms**
2012
Previous code(s): C04-A07D5, C04-A08C1

C04-A08F1 # .. **Pinophyta (conifers)**
2012

C04-A08F2 # .. **Ginkgophyta**
2012

C04-A08F3 # .. **Cycadophyta (cycads)**
2012

C04-A08F4 # .. **Gnetophyta**
2012

C04-A08G # . **Angiosperms**
2012
Previous code(s): C04-A07D5, C04-A08C2

C04-A08G1 # .. **Monocots**
2012

C04-A08G2 # .. **Dicots**
2012

C04-A09 # **Plant parts general and other**
Plant parts derived from specific plant species are additionally coded in C04-A08.
1994
Previous code(s): C04-A07D

C04-A09A # . **Leaves**
1994
Previous code(s): C04-A07D5

C04-A09B # . **Flowers and parts**
Excluding pollen.
1994
Previous code(s): C04-A07D5

C04-A09C # . **Pollen**
1994
Previous code(s): C04-A07F, C04-B04C2

C04-A09D # . **Roots**
1994
Previous code(s): C04-A07D5

C04-A09F # . **Seeds, seed husks, seed meal, cereal, grain, nuts, bran**
1994
Previous code(s): C04-A07D2

C04-A09G # . **Wood, shavings, bark, sawdust**
1994
Previous code(s): C04-A07D3

C04-A09H # . **Straw, hay, stems, sap, plant resin**
includes propolis
1994
Previous code(s): C04-A07D4

C04-A09J # . **Peat, humic acid**
1994
Previous code(s): C04-A07D1

C04-A09K # . **Fruit**
2006
Previous codes(s): C04-A09

C04-A10 # **Plant extracts general and other**
Plant extracts derived from specific plant species are additionally coded in C04-A08. When the use of "Chinese herbal medicine" is claimed this code is applied.
1994
Previous code(s): C04-A07F

C04-A10A # . **Fungal extracts**
e.g. mushrooms, toadstools but not unicellular fungi.
1994
Previous code(s): C04-A07F1

C04-A10B # . **Leaf extracts**
1994
Previous code(s): C04-A07F2

C04-A10C # . **Flower extracts**
e.g. extracts from flower parts excluding pollen.
1994
Previous code(s): C04-A07F2

C04-A10D # . **Pollen extract**
1994
Previous code(s): C04-A07F, C04-B04C2

C04-A10F # . **Root extracts**
1994
Previous code(s): C04-A07F2

C04-A10G # . **Seed, seed husk, seed meal, cereal, grain and nut extracts**
1994
Previous code(s): C04-A07F2

C04-A10H # . **Wood shaving, bark, sawdust extracts**
1994
Previous code(s): C04-A07F2

C04-A10J # . **Straw, hay, stem and sap extracts**
1994
Previous code(s): C04-A07F

C04-A10K # . **Fruit extract**
2006

C04-A98 **Patent with herbal composition**
2012

C04-A99 **Patent with hybrid plant**
2012

C04-B ANIMAL, MICROBIOLOGICAL AND GENERAL EXTRACTS

C04-B01A . **Halogenated oils, waxes, etc.**
1965

C04-B01B . **Fats, lanolin, lipids, glycolipids**
1965

C04-B01C . **Oils and waxes general**

C04-B01C1 .. **Vegetable oils and waxes**
e.g. sunflower oil, soy bean oil, cotton seed oil.
1986

C04-B01C2 .. **Animal oils and waxes**
e.g. spermaceti, cod liver oil, honeycomb and beeswax.
1986

C04-B01C3 .. **Mineral oils and waxes**
e.g. vaseline, petroleum, liquid paraffin and synthetic oils.
1986

C04-B01D . **Other oil and wax derivatives**
Oils and waxes that are hydrogenated and/or modified by a polymer. May be applied in conjunction with codes from C04-B01C.
2010
Previous code(s): C04-B01C

C04-B02A . **Gibberellins**
1965

C04-B02B . **Microorganisms general**
1965-1993
Now coded as: C04-F01

C04-B02B1 .. **Bacteria**
e.g. Staphylococcus, Bacillus, Rickettsia.
1986-1993
Now coded as: C04-F10+

C04-B02B2 .. **Fungi**
e.g. Candida, Aspergillus.
1986-1993
Now coded as: C04-F09+

C04-B02B3 .. **Algae**
e.g. Spirella.
1986-1993
Now coded as: C04-F08

C04-B02B4 .. **Viruses**
1986-1993
Now coded as: C04-F11

C04-B02B5 .. **Other microorganisms**
e.g. Mycoplasma.
1986-1993
Now coded as: C04-F06, C04-F07, C04-F10A4

C04-B02C . **Enzymes general**
The code C04-B02C is used when the type of enzyme is unspecified. When specific enzymes are given then these should be coded in C04-B02C1 to C04-B02C7 in preference to C04-B02C.
1965-1993
Now coded as: C04-L01

C04-B02C1 .. **Coenzymes**
1977-1993
Now coded as: C04-L02

C04-B02C2 .. **Oxidoreductases**
1977-1993
Now coded as: C04-L03+

C04-B02C3 .. **Hydrolases**
e.g. chymotrypsin, trypsin, papain, fibrinolysin, streptokinase, streptodorinase, collagenase, plasmin, plasminogen.
1977-1993
Now coded as: C04-L05+

C04-B02C4 .. **Transferases**
1986-1993
Now coded as: C04-L04+

C04-B02C5 .. **Lyases**
1986-1993
Now coded as: C04-L06

C04-B02C6 .. **Isomerases**
1986-1993
Now coded as: C04-L07

C04-B02C7 .. **Ligases (synthetases)**
1986-1993
Now coded as: C04-L08

C04-B02D . **Hormones and steroids general**
The code C12-G04 or C04-C01 is not additionally applied with C04-B02D2 to C04-B02D4 unless a structure is given in the patent.
1965-1993
Now coded as: C04-J01, C04-J02, C04-J03, C04-J04, C04-J05

C04-B02D1 .. **Steroidal hormones (no complete structure)**
1986-1993
Now coded as: C04-J02

C04-B02D2 .. **Pancreatic hormones**
1986-1993
Now coded as: C04-J03+

C04-B02D3 .. **Thyroid and parathyroid hormone**
e.g. calcitonin, thyrocalcitonin, parathyroid hormone and their derivatives.
1986-1993
Now coded as: C04-J04+

C04-B02D4 .. **Pituitary gland hormones**
e.g. neurohypophyseal, intermedin, chromophorotropic, melanocyte stimulating, melanophoric hormone, adreno-corticotropic hormone (ACTH) corticotropic, follicle stimulating (FSH), interstitial call stimulating, prolactin, mammotrophin, somatotropin, thyroid stimulating, thyrotropic, thyrotropin, vasopressin, chorionic gonadotropin, luteinising, growth and their derivatives.
1986-1993
Now coded as: C04-J05+

C04-B02E . **Prostaglandins**
From 197501 prostaglandins are coded C04-B02E only, and no longer according to their chemical structure.
1975-1993
Now coded as: C04-H03+

C04-B03 **Nucleosides and nucleotides general**
Coenzymes which are nucleotides are also coded C04-B02C1 (before 1994) or C04-L02 (from 1994). Nucleosides and nucleotides containing xanthine bases are coded C04-B03+ and not C04-A06.
1965

C04-B03A . **Nucleosides**
e.g. adenosine, guanosine, inosine, cytidine, uridine, thymidine. From 2005 chemically modified nucleosides are coded C04-B03D.
1986

C04-B03B . **Nucleotides**
e.g. adenylic acid, cytidylic acid. From 2005 chemically modified nucleotides are coded C04-B03E.
1986

C04-B03C **. Oligonucleotides**
This code is applied whenever the term "Oligonucleotide" is used in a patent, or otherwise to chains of 3 to 6 nucleotide units.
1994
Previous code(s): C04-B04A1, C04-B03B

C04-B03D **. Modified nucleosides**
E.g. C in ring, open chain structure. Compounds where the only modification is a deoxyribose sugar are searched as nucleosides.
2005
Previous code: C04-B03A

C04-B03E **. Modified nucleotides**
E.g. C in ring, open chain structure. Compounds where the only modification is a deoxyribose sugar are searched as nucleotides.
2005
Previous code: C04-B03B

C04-B03F **. Modified oligonucleotides**
Compounds where the only modification is one or more deoxyribose sugars are searched as oligonucleotides. For the most general references only.
2018

C04-B03F1 **.. Capped modified oligonucleotides**
Oligonucleotide must be composed of 7 or fewer nucleobases, see C04-E: for associated capped codes when 8 bases or longer. Includes trinucleotide cap and trinucleotide mRNA cap, particularly those based on m7G (7-methylated-guanine) and analogs.
2024

C04-B03F2 **.. Other modified oligonucleotides**
Oligonucleotide must be composed of 7 or fewer nucleobases.
2024

C04-B04A **. Proteins, nucleic acids, cells general**
For antigens see C04-B04C.
1965-1993
Now coded as: C04-E01, C04-F01, C04-N04, C04-N05, C04-N06

C04-B04A1 **.. DNA, vector DNA, RNA, nucleic acids**
1986-1993
Now coded as: C04-E02+, C04-E03+, C04-E04, C04-E05, C04-E06, C04-E07, C04-E08

C04-B04A2 **.. Plant cells**
1986-1993
Now coded as: C04-F08

C04-B04A3 **.. Animal cells**
For blood cells see C04-B04D, microbial cells see C04-B02B.
1986-1993
Now coded as: C04-F02, C04-F05, C04-F07

C04-B04A4 **.. Proteins from plants and mushrooms**
e.g. gluten.
1986-1993
Now coded as: C04-N01+

C04-B04A5 **.. Proteins from microorganisms**
1986-1993
Now coded as: C04-N03+

C04-B04A6 **.. Proteins from animals or insects**
e.g. gelatin, egg white, glycoproteins, gamma globulins, silk.
1986-1993
Now coded as: C04-N02+

C04-B04B **. Animal excrements general**
1965

C04-B04B1 **.. Urine**
1994
Previous code(s): C04-B04B

C04-B04B2 **.. Faeces**
1994
Previous code(s): C04-B04B

C04-B04C **. Antigens, general Antibody (pre-1994)**
1965
Previous code(s): C04-G01

C04-B04C1 **.. Microbial antigen**
When used as a vaccine then C02-V02 is coded (before 1994) or C14-S11+ (from 1994).
1986

C04-B04C2 **.. Other antigens**
Material which is antigenic is also coded.
1986

C04-B04C3 **.. Microbial antibody**
1986-1993
Now coded as: C04-G07, C04-G08, C04-G09

C04-B04C4 **.. Anticancer antibody**
1986-1993
Now coded as: C04-G05

C04-B04C5 .. **Monoclonal antibody**
1986-1993
Now coded as: C04-G21

C04-B04C6 .. **Other antibody including immunoglobulin and haemaglutinin**
1986-1993
Now coded as: C04-G02, C04-G03, C04-G04, C04-G06, C04-G10, C04-G20, C04-G22

C04-B04C7 .. **Haptens**
A substance which can combine with antibody but cannot itself initiate an immune response unless it is attached to a carrier molecule.
1994
Previous code(s): C04-B04C

C04-B04C8 .. **Cancer antigen**
2005

C04-B04C9 .. **Allergen**
An antigenic substance capable of producing immediate type hypersensitivity (i.e. an allergic reaction). The specific substance which is antigenic is additionally coded (e.g. C04-C08C2 + C04-A09C for pollen).
2005

C04-B04D . **Blood and derivatives general**
1965

C04-B04D1 .. **Blood cells and derivatives**
Including leucocytes, erythrocytes, lymphocytes). These are not coded under C04-B04A3.
1986-1993
Now coded as: C04-F04

C04-B04D2 .. **Blood proteins**
Excluding blood factors. e.g. serum albumin, hemoglobin, fibrinogen (prior to 198601 see also C04-B04A). From 1994 all clotting factors including fibrin and fibrinogen are coded under C04-H19.
1986

C04-B04D3 .. **Blood factors**
e.g. clotting factors, thrombin (see also C04-B02C3 for prothrombin, fibrinogen).
1986-1993
Now coded as: C04-H01, C04-H13, C04-H14, C04-H15, C04-H19

C04-B04D4 .. **Blood serum, plasma**
Excluding C04-B04D2/3.
1986

C04-B04D5 .. **Whole blood**
Excluding C04-B04D1 to C04-B04D4.
1986

C04-B04E . **Bone, marrow, nails, skin, teeth**
Includes skin and hair as well as extracts. Also includes horn extract, shell extract and shell powder.
1965, 2010

C04-B04F . **Enzyme inhibitors**
1965-1993
Now coded as: C04-M01

C04-B04G . **Gland extracts**
Includes saliva, snake venom and musk.
1965

C04-B04H . **Organ extracts**
Including extracts from all body organs, such as, heart, kidney, liver, placenta, nerve, brain, lung, pancreas, intestine, stomach
1965

C04-B04J . **Metabolic factors**
1965-1993
Now coded as: C04-H01, C04-H04+, C04-H06+, C04-H08, C04-H09, C04-H10, C04-H12, C04-H13, C04-H14, C04-H16, C04-H17, C04-H18

C04-B04K . **Milk**
Including derivatives.
1965

C04-B04L . **Other mammalian extracts**
This code is used for mammalian extracts only (from 1994). For whole mammals see C04-P.
1965

C04-B04M . **Other non-mammalian extracts**
This code is used for non-mammalian extracts only (from 1994). For whole animals see C04-P.
1965

C04-B04M1 .. **Arthropod**
2012

C04-B04M2 .. **Amphibian**
2012

C04-B04M3 .. **Reptile**
2012

C04-B04M4 .. **Fish**
2012

C04-B04M5 .. **Avian**
2012

C04-B04M6 .. **Trochozoa**
Includes annelids (worms) and molluscs.
2017

C04-B04N . **Eggs**
Used when the source of the eggs is not specified or where all three subcodes are applicable. Also includes egg parts and egg extracts. Avian eggs code as C04-B04N1 from 201501.
2014

C04-B04N1 .. **Avian eggs**
2015
Previous code(s): C04-B04N

C04-B02N2 .. **Fish eggs, fish roe**
2015

C04-B04N3 .. **Eggs from other sources**
Includes insect and reptile eggs.
2015

C04-C **POLYMERS**
The generic codes C04-C01, C04-C02 and C04-C03 are only used for general disclosures which would otherwise require several specific codes. Therefore when a specific code is searched, the corresponding generic code must also be searched.

C04-C01 **Polypeptides general**
Polypeptides containing four or more peptide units are coded from C04-C01A to C04-C01G only, tripeptides are coded both C04-C01A and according to their chemical structure (in C05 to C10) and dipeptides are coded according to their chemical structures only. Cystine represents two amino acid residues. Polypeptide/protein sequences are further coded under C04-N.

C04-C01A . **3 to 5 alpha amino acid residues**
1986

C04-C01B . **6 to 10 alpha amino acid residues**
1986

C04-C01C . **11 to 15 alpha amino acid residues**
1986

C04-C01D . **16 to 20 alpha amino acid residues**
1986

C04-C01E . **21 to 25 alpha amino acid residues**
1986

C04-C01F . **26 to 30 alpha amino acid residues**
1986

C04-C01G . **31 or more alpha amino acid residues**
This code also includes proteins of defined amino acid sequence.
1986

C04-C01H . **Modified and/or cyclic peptides**
Includes analogs. Should be applied in conjunction with a length code selected from C04-C01A to C04-C01G. Not used for peptides cyclized purely by disulfide bridge formation.
2005

C04-C02 **Polysaccharides general**
These must contain at least 7 sugar residues in sequence.

C04-C02A . **Cellulose and derivatives**
1986

C04-C02A1 .. **Unmodified cellulose**
1986

C04-C02A2 .. **Cellulose ethers**
e.g. carboxymethylcellulose.
1986

C04-C02A3 .. **Cellulose esters**
e.g. cellulose acetate.
1986

C04-C02B . **Starch, dextrin and derivatives**
1986

C04-C02B1 .. **Cyclodextrin and derivatives**
1986

C04-C02B2 .. **Unmodified starch**
1986

C04-C02B3 .. **Modified starch**
Includes derivatives of starch such as carboxymethylstarch.
2010
Previous code(s): C04-C02B

C04-C02B4 .. **Dextrin**
2012

C04-C02C . **Dextran**
1986

C04-C02D . **Polysaccharides from plant**
Excluding cellulose, starch, dextran, dextrin. Including pectin, plant gums, alginate, agar. Code(s) for the appropriate plant division(s) are also applied, if source plant(s) known.
1986

C04-C02E . **Polysaccharides from animal, bird, reptile or arthropod**
1986

C04-C02E1 **.. Heparin (optionally modified)**
1986

C04-C02E2 **.. Chondroitin (optionally modified)**
1986

C04-C02E3 **.. Chitin (optionally modified)**
C04-C02F may be also searched if chitin is obtained from fungal source.
1986

C04-C02E4 **.. Hyaluronic acid (optionally modified)**
2012

C04-C02F **. Polysaccharides from microbial sources**
Polysaccharide which is modified microbiologically can be also searched under the code for the original polysaccharide.
1986

C04-C02V **. Lipopolysaccharide**
1994
Previous code(s): C04-C02,C04-B01B

C04-C02X **. Oligosaccharides**
This code is applied whenever the term oligosaccharide is used in a patent, or otherwise to chains of 3 to 6 sugar units. Tetrahydropyran(furan) are **not** coded unless they are ring modified.
1994

C04-C03 **Polymers general**

C04-C03A **. Poly N-vinyl-lactams**
1975

C04-C03B **. Other addition**
1975

C04-C03C **. Polyethers**
Including thioethers and sulfides.
1975

C04-C03D **. Natural, other condensation**
1994

C04-C03E # **. Dendrimers**
2002

C04-C03F **. Silicones**
2005
Previous code: C04-C03D

C04-D **OTHER NATURAL PRODUCTS**

C04-D01 **Sugars (mono- or disaccharides)**
This code is used for sugars of undefined structure only, or when the sugar is an essential ingredient of a pharmaceutical composition. Includes molasses.

C04-D01A **. Honey**
2011

C04-D02 **Other natural products**
Includes any other natural product not covered by other codes e.g. clay, minerals, etc.

C04-D03 **Biomass**
1994
Previous code(s): C04-A07D, C04-A07F, C04-B02B, C04-B04B, C04-B04L, C04-B04M

C04-E **NUCLEIC ACIDS**
E suffix is not appended to the codes in this section.
1994

C04-E01 **Nucleic acid general and other**
This code covers only non-specific or general nucleic acid. It is not used to replace three or more codes for specific forms of DNA/RNA which are all coded individually in section C04-E02 to C04-E08. For example, if a patent claims: 1) a DNA construct coding for 5-HT receptor, 2) a vector, 3) a nucleic acid probe, 4) antisense oligonucleotide, the codes are: C04-B03C, C04-E03D, C04-E05, C04-E06, C04-E08.
1994
Previous code(s): C04-B04A1

C04-E01A **. DNA**
Deoxyribonucleic acid.
2018

C04-E01B **. RNA**
Ribonucleic acid.
2018

C04-E01X **. Capped nucleic acids**
Includes trinucleotide capped sequences, particularly those based around m7G (7-methylated guanine) and analogs. To be searched alongside all other applicable codes from C04-E relating to the nucleic acid.
2024

C04-E02 **Altered DNA coding sequences**
This code includes engineered, recombinant constructs, chimeric genes, heterologous genes, fusion genes, allelic variants, mutant allele and RNA transcripts.
1994
Previous code(s): C04-B04A1

C04-E02A **. Coding for antibodies**
1994
Previous code(s): C04-B04A1

C04-E02B . **Coding for modifiers of cell function and growth**
1994
Previous code(s): C04-B04A1

C04-E02C . **Coding for hormones**
1994
Previous code(s): C04-B04A1

C04-E02D . **Coding for receptors**
1994
Previous code(s): C04-B04A1

C04-E02E . **Coding for enzymes**
1994
Previous code(s): C04-B04A1

C04-E02F . **Coding for other protein/polypeptide**
1994
Previous code(s): C04-B04A1

C04-E02G . **Oncogene**
2002

C04-E02H . **Encoding fusion protein**
2002

C04-E02J . **Encoding antigens**
2007
Previous code(s): C04-E02F

C04-E02K . **Encoding nucleic acid**
2009

C04-E03 **Other DNA coding sequences**
These codes cover wild type genes and their fragments, and include their RNA transcripts.
1994
Previous code(s): C04-B04A1

C04-E03A . **Coding for antibodies**
1994
Previous code(s): C04-B04A1

C04-E03B . **Coding for modifiers of cell function and growth**
1994
Previous code(s): C04-B04A1

C04-E03C . **Coding for hormones**
1994
Previous code(s): C04-B04A1

C04-E03D . **Coding for receptors**
1994
Previous code(s): C04-B04A1

C04-E03E . **Coding for enzymes**
1994
Previous code(s): C04-B04A1

C04-E03F . **Coding for other protein/polypeptide**
1994
Previous code(s): C04-B04A1

C04-E03G . **Oncogene**
2002

C04-E03H . **Encoding fusion protein**
2002-2008

C04-E03J . **Encoding antigens**
2007
Previous code(s): C04-E03F

C04-E03K . **Encoding nucleic acid**
2009

C04-E04 **Promoters, enhancers, regulatory sequences**
1994
Previous code(s): C04-B04A1

C04-E05 **Primers, probes**
Probes are coded in conjunction with C12-K04G codes, e.g. a probe for detecting cancer is coded C04-E05 and C12-K04G2A.
1994
Previous code(s): C04-B04A1

C04-E06 **Antisense sequences**
Excluding antisense probes.
1994
Previous code(s): C04-B04A1

C04-E07 **Other non-coding sequences**
This code includes ribozyme, ribosomal, transfer, mitochondrial.
1994
Previous code(s): C04-B04A1

C04-E07A . **Ribozyme**
An RNA molecule that has catalytic activity.
2005

C04-E07B . **DNAzyme**
A DNA molecule that has catalytic activity.
2005

C04-E07C . **siRNA (short interfering RNA)**
Double stranded short RNA molecules that bind to RNA and target them for degradation and/or destruction.
2005

C04-E07D . **miRNA**
Micro RNA.
2005

C04-E07E . **shRNA**
Small hairpin RNA.
2006

C04-E07F . **Aptamer**
2007

C04-E08 **Vectors, plasmids, cosmids, transposons**
Viral vector is coded under virus.
1994
Previous code(s): C04-B04A1

C04-E09 **Single Nucleotide Polymorphism (SNP)**
2002

C04-E10 **Peptide nucleic acid**
2002

C04-E11 **Other analog nucleic acid**
2002

C04-E12 **Reporter/marker nucleic acid**
2002

C04-E13 **CRISPR**
Clustered Regularly Interspaced Short Palindromic Repeats. Includes SPIDR (Spacer Interspersed Direct Repeats). May be additionally searched with CRISPR nuclease (C04-L05A2) if the system also contains a claimed enzymatic component e.g. CRISPR/Cas system.
1994

C04-E14 **Bacterial nucleic acid**
2021

C04-E15 **Viral nucleic acid**
2021

C04-E16 **Fungal nucleic acid**
2022

C04-E99 **Patent with Geneseq record**
2008

C04-F **CELLS, MICROORGANISMS, TRANSFORMANTS, HOSTS**
E suffix is appended to codes for cells which are products of genetic manipulation, but not to naturally occurring mutant microbial strains, cell fusion products or chemical mutagenesis products.
1994

C04-F01 # **Cells, microorganisms, transformants, hosts, cell lines, tissue general**
1994
Previous code(s): C04-B02B, C04-B04A, C04-B04D1

C04-F02 # **Mammal (including human)**
1994
Previous code(s): C04-B04A3

C04-F02A # **. Cancer cells/carcinoma**
2002

C04-F02B # **. Stem cells**
Cell that can replicate indefinitely and differentiate into other cells.
2005

C04-F02C # **. Progenitor cells**
Cell that is more advanced than a stem cell, giving rise to a distinct cell lineage.
2017

C04-F03 # **Sperm, ova (germ cells)**
1994
Previous code(s): C04-B02D

C04-F04 # **Blood cells (general)**
This code covers non-specific blood cells or when three or more specific types of blood cells are mentioned.
1994
Previous code(s): C04-B04D1

C04-F04A # **. Red blood cells**
2006
Previous code(s): C04-F04

C04-F04B # **. White blood cells (general)**
This code is used when non-specific white blood cells are mentioned or when three or more white blood cell types are mentioned.
2006
Previous code(s): C04-F04

C04-F04B1 # **.. Lymphocytes**
2006
Previous code(s): C04-F04

C04-F04B1A **... T-lymphocytes**
2006
Previous code(s): C04-F04

C04-F04B1B **... B-lymphocytes**
2006
Previous code(s): C04-F04

C04-F04B2 # **.. Other white blood cells**
2006
Previous code(s): C04-F04

C04-F04B2A **... Dendritic cells**
2006
Previous code(s): C04-F04

C04-F04B2B **... Macrophages**
2006
Previous code(s): C04-F04

C04-F04B2C **... Neutrophils**
2006
Previous code(s): C04-F04

C04-F04B2D **... Other miscellaneous white blood cells**
2006
Previous code(s): C04-F04

C04-F05 # **Hybridoma**
1994
Previous code(s): C04-B04A3

C04-F05A # **. Chimeric & fused cells**
Cells comprising or formed from components derived from two separate cell types, not including hybridomas coded under C04-F05.
2005

C04-F06 # **Protozoa**
1994
Previous code(s): C04-B02B5

C04-F07 # **Other animal**
1994
Previous code(s): C04-B04A3

C04-F07A # . **Arthropod**
2002

C04-F07B # . **Amphibian**
2002

C04-F07C # . **Reptile**
2002

C04-F07D # . **Fish**
2002

C04-F07E # . **Avian**
2006
Previous code(s): C04-F07

C04-F08 # **Plant/algae**
1994
Previous code(s): C04-B04A2, C04-B02B3

C04-F08A # . **Algae**
Includes diatoms.
2008

C04-F09 # **Yeast/fungus general and other**
1994
Previous code(s): C04-B02B2

C04-F09A # . **Aspergillus**
e.g. A. nidulans, A. fumigatus, A. flavus, A. niger, A. oryzae.
1994
Previous code(s): C04-B02B2

C04-F09B # . **Neurospora**
e.g. N. crassa.
1994
Previous code(s): C04-B02B2

C04-F09C # . **Saccharomyces**
e.g. S. pombe, S. cerevisiae (brewer's yeast)
1994
Previous code(s): C04-B02B2

C04-F09D # . **Pichia**
e.g. Pichia pastoris
2005

C04-F09E # . **Multicellular fungi, non-higher**
2012

C04-F10 # **Bacteria general**
1994
Previous code(s): C04-B02B1

C04-F10A # . **Gram-negative genera, general and other**
1994
Previous code(s): C04-B02B1

C04-F10A1 # .. **Bordetella**
e.g. B. pertussis.
1994
Previous code(s): C04-B02B1

C04-F10A2 # .. **Borrelia**
1994
Previous code(s): C04-B02B1

C04-F10A3 # .. **Escherichia**
e.g. E. coli.
1994
Previous code(s): C04-B02B1

C04-F10A4 # .. **Mycoplasma**
e.g. M. pneumoniae, M. mycoides.
1994
Previous code(s): C04-B02B1

C04-F10A5 # .. **Neisseria**
e.g. N. gonorrhoeae, N. meningitides.
1994
Previous code(s): C04-B02B1

C04-F10A6 # .. **Pseudomonas**
e.g. P. aeruginosa, P. mallei.
1994
Previous code(s): C04-B02B1

C04-F10A7 # .. **Rickettsia**
e.g. R. prowazekii.
1994
Previous code(s): C04-B02B1

C04-F10A8 # .. **Salmonella**
e.g. S. typhi.
1994
Previous code(s): C04-B02B1

C04-F10A9 # .. **Vibrio**
e.g. V. cholerae, V. parahemolyticus.
1994
Previous code(s): C04-B02B1

C04-F10B # . **Gram-positive genera, general and other**
1994
Previous code(s): C04-B02B1

C04-F10B1 # .. **Bacillus**
e.g. B. subtilis.
1994
Previous code(s): C04-B02B1

C04-F10B2 # .. **Mycobacteria**
e.g. M. tuberculosis, M. bovis, M. leprae, M. phlei.
1994
Previous code(s): C04-B02B1

C04-F10B3 # .. **Staphylococcus**
e.g. S. aureus, S. epidermidis.
1994
Previous code(s): C04-B02B1

C04-F10B4 # .. **Streptococcus**
e.g. S. pyogenes, S. fecalis.
1994
Previous code(s): C04-B02B1

C04-F10B5 # .. **Streptomyces**
e.g. S. griseus, S. scabies.
1994
Previous code(s): C04-B02B1

C04-F11 # **Viruses**
Including bacteriophage lambda and viral vectors.
1994
Previous code(s): C04-B02B4

C04-F11A # **. DNA virus general**
Virus that infects foreign DNA into host cell, which then produces viral protein.
2005

C04-F11A1 # **.. Adenovirus**
Includes adeno-associated virus.
2007

C04-F11B # **. RNA virus general**
Virus that infects foreign RNA into host cell, where the DNA sequence is then transcribed and viral protein produced.
2005

C04-F11B1 # **.. Retrovirus**
2007

C04-F11B2 # **.. Coronavirus**
Including COVID-19.
2021

C04-F12 # **Minicells & organelles**
E.g. mitochondria and any subcellular particles, including exosomes and migrasomes.
2005

C04-F12A # **. Chloroplasts**
2022

C04-F13 # **Platelets**
2010

C04-G **ANTIBODY DEFINED IN TERMS OF ANTIGEN**
E suffix is appended only when the antibody is produced by genetic methods beyond standard hybridoma technology.
1994

C04-G01 # **General and other**
Also includes general and unspecified immunoglobulins (specific immunoglobulins may be searched under the heading C04-G27:).
1994
Previous code(s): C04-B04C

C04-G01A **. Chimeric antibody**
An antibody genetically engineered to contain the variable fragment from one species fused to the constant region from another species.
2005

C04-G01B # **. Human antibody**
An antibody produced from a single human cell line.
2005

C04-G01C **. Humanised antibody**
An antibody from a single cell line genetically engineered to contain around 90% human protein, reducing the likelihood of an immune response.
2005

C04-G01D # **. Murine antibody**
An antibody produced from a single mouse cell line.
2005

C04-G02 # **Antimodifier of cell function and growth, antihormone antibody**
1994
Previous code(s): C04-B04C6

C04-G03 # **Antienzyme antibody**
1994
Previous code(s): C04-B04C6

C04-G04 # **Antireceptor antibody**
1994
Previous code(s): C04-B04C6

C04-G05 # **Anticancer cell antibody**
1994
Previous code(s): C04-B04C4

C04-G06 # **Antiblood cells antibody**
e.g. antibody to T-cell, B-cell.
1994
Previous code(s): C04-B04C6

C04-G07 # **Antibacteria antibody**
1994
Previous code(s): C04-B04C3

C04-G08 # **Antivirus antibody**
1994
Previous code(s): C04-B04C3

C04-G09 # **Antimicroorganisms (other) antibody**
1994
Previous code(s): C04-B04C3

C04-G09A # **. Antifungus antibody**
2008

C04-G09B # **. Antiprotozoal antibody**
2008

C04-G10 # **Antiplant antibody**
1994
Previous code(s): C04-B04C6

C04-G11 # **Antibody binding to another antibody**
Also includes anti-idiotypic antibody.
2006

C04-G12 # **Antiparasitic antibody**
Antibody acting against parasitic organisms/any kind of parasites other than bacteria, virus, fungi, protozoa.
2011

C04-G20 # **Catalytic antibodies**
Including abzyme. This code defines antibodies other than in terms of their antigen and may be applied in conjunction with another C04-G code.
1994
Previous code(s): C04-B04C6

C04-G21 # **Monoclonal antibody**
This code defines antibodies other than in terms of their antigen and may be applied in conjunction with another C04-G code.
1994
Previous code(s): C04-B04C5

C04-G22 # **Polyclonal antibodies**
This is another definition of antibodies than in terms of antigen. This code is applied in conjunction with one of C04-G01 to C04-G20.
1994
Previous code(s): C04-B04C6

C04-G23 # **Antibody fragments**
2006

C04-G24 # **Bispecific antibodies**
2006

C04-G25 # **Anti-prion protein antibodies**
2008

C04-G26 # **Heterospecific antibody**
An individual antibody which can bind more than one antigen due to the presence of two or more different binding sites. May be searched in conjunction with additional codes from C04-G.
2016

C04-G27 **Immunoglobulins (specific)**
Only specific immunoglobulins are covered within this coding section. General and unspecified immunoglobulins should be searched using C04-G01.
2016

C04-G27A # **. Immunoglobulin A**
May be searched in conjunction with additional codes from C04-G.
2016

C04-G27D # **. Immunoglobulin D**
May be searched in conjunction with additional codes from C04-G.
2016

C04-G27E # **. Immunoglobulin E**
May be searched in conjunction with additional codes from C04-G.
2016

C04-G27G # **. Immunoglobulin G**
May be searched in conjunction with additional codes from C04-G.
2016

C04-G27M # **. Immunoglobulin M**
May be searched in conjunction with additional codes from C04-G.
2016

C04-G27X # **. Immunoglobulin X**
May be searched in conjunction with additional codes from C04-G. Not coded where X is stated in the document to represent an undefined or general immunoglobulin.
2024

C04-G27W # **. Immunoglobulin W**
Found in sharks and skates; related to mammalian IgD. May be searched in conjunction with additional codes from C04-G.
2021

C04-G27Y # **. Immunoglobulin Y**
May be searched in conjunction with additional codes from C04-G.
2020

C04-H **MODIFIERS OF CELL FUNCTION AND GROWTH**
The term "modifier of cell function and growth" includes all biological response modifiers (immune system mediators) such as: prostaglandins, cytokines, monokines, interleukines, lymphokines (a subset of interleukines), CSFs, interferons, the growth factors, somatomedins and blood factors. All of these are proteins except for prostaglandins. The E suffix is appended to codes to indicate that molecules are produced by exogenous gene expression in host cells as well as derivatives modified at the genetic level.
1994

C04-H01 # **Modifier of cell function and growth general and other**
This code is applied when either a generic term such as cytokine, is used or when a specific substance does not fit into any category covered by C04-H02 to C04-H20B. It also includes blood factors general and other.
1994
Previous code(s): C02-V03, C04-B02C, C04-B02E, C04-B04A, C04-B04D, C04-C01

C04-H02 # **Interleukins general and other**
1994
Previous code(s): C04-C01G

C04-H02A # . **Interleukin 1**
1994
Previous code(s): C04-C01G

C04-H02B # . **Interleukin 2**
1994
Previous code(s): C04-C01G

C04-H02C # . **Interleukin 3 (Multi-CSF)**
1994
Previous code(s): C04-C01G

C04-H02D # . **Interleukin 4**
1994
Previous code(s): C04-C01G

C04-H02F # . **Interleukin 5**
1994
Previous code(s): C04-C01G

C04-H02G # . **Interleukin 6**
1994
Previous code(s): C04-C01G

C04-H02H # . **Interleukin 7**
1994
Previous code(s): C04-C01G

C04-H02J # . **Interleukin 8 (NAP, Neutrophil Activating Protein)**
1994
Previous code(s): C04-C01G, C04-B04A

C04-H02K # . **Interleukin 9**
1994
Previous code(s): C04-C01G

C04-H02L # . **Interleukin 10**
1994
Previous code(s): C04-C01G

C04-H02M # . **Interleukin 11**
1994
Previous code(s): C04-C01G

C04-H02N # . **Interleukin 12**
1994
Previous code(s): C04-C01G

C04-H02P # . **Interleukin 13**
1994
Previous code(s): C04-C01G

C04-H02Q # . **Interleukins 14-20**
2006
Previous code(s): C04-H02

C04-H02R # . **Interleukins 21-25**
2006
Previous code(s): C04-H02

C04-H02S # . **Interleukins 26-30**
2006
Previous code(s): C04-H02

C04-H02T # . **Interleukins 31-35**
2006
Previous code(s): C04-H02

C04-H03 **Prostaglandins general and other**
Includes all modified prostaglandins not covered more specifically in subcodes.
2016
Previous code(s): C04-B02E

C04-H03A . **Prostaglandin E1**
1994
Previous code(s): C04-B02E

C04-H03B . **Prostaglandin E2**
1994
Previous code(s): C04-B02E

C04-H03C . **Prostaglandin F2 alpha**
1994
Previous code(s): C04-B02E

C04-H03D . **Prostacyclin (Prostaglandin I2)**
1994
Previous code(s): C04-B02E, C06-A02

C04-H03F . **Leukotrienes**
1994
Previous code(s): C04-B02E, C07-A03, C10-B02D, C10-C04D

C04-H03G . **Thromboxanes**
1994
Previous code(s): C04-B02E, C06-A02,C07-A02

C04-H04 # **CSFs (Colony Stimulating Factors) General and other**
1994
Previous code(s): C04-B04J

C04-H04A # . **G-CSF (Granulocyte Colony Stimulating Factor)**
1994
Previous code(s): C04-B04J

C04-H04B # . **M-CSF (Macrophage Colony Stimulating Factor)**
1994
Previous code(s): C04-B04J

C04-H04C # . **GM-CSF (Granulocyte Macrophage Colony Stimulating Factor)**
1994
Previous code(s): C04-B04J

C04-H04D # **. MEG-CSF (Megakaryocyte Colony Stimulating Factor)**
1994
Previous code(s): C04-B04J

C04-H05 # **Interferons general and other**
1994
Previous code(s): C02-V03

C04-H05A # **. Interferon alpha**
1994
Previous code(s): C02-V03

C04-H05B # **. Interferon beta**
1994
Previous code(s): C02-V03

C04-H05C # **. Interferon gamma**
1994
Previous code(s): C02-V03

C04-H05D # **. Interferon delta**
2024
Previous code(s): C02-V03

C04-H05K # **. Interferon kappa**
2024
Previous code(s): C02-V03

C04-H06 # **Growth factors general and other**
1994
Previous code(s): C04-B04J

C04-H06A # **. EGF (Epidermal Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06B # **. PDGF (Platelet Derived Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06C # **. MDGF (Macrophage Derived Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06D # **. NGF (Nerve Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06F # **. TGF (Transforming Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06G # **. FGF (Fibroblast Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06H # **. Somatomedins, sulfation factors**
This code includes IGF's (insulin-like growth factors).
1994
Previous code(s): C04-B04J

C04-H06J # **. PGF (Prostatic Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06K # **. HGF (Hepatocyte Growth Factor)**
1994
Previous code(s): C04-B04J

C04-H06L # **. Bone morphogenetic protein**
2002

C04-H06M # **. Vascular endothelial growth factor**
Also known as VEGF.
2006
Previous code(s): C04-H06

C04-H07 # **Erythropoietin (Epo), thrombopoietin**
1994
Previous code(s): C04-B04A6, C04-B02D, thrombopoietin C04-H06 (pre-2010)

C04-H08 # **TNF (Tumor Necrosis Factor)**
1994
Previous code(s): C04-B04J

C04-H09 # **LIF (Leukemia inhibitory factor)**
1994
Previous code(s): C04-B04J

C04-H10 # **MIS (Mullerian inhibitory substance)**
1994
Previous code(s): C04-B04J

C04-H11 # **MIP (Macrophage inflammatory protein)**
1994
Previous code(s): C04-B04A6

C04-H12 # **Megakaryocyte potentiator**
1994
Previous code(s): C04-B04A6, C04-B04J

C04-H13 # **Lymphotoxin (LT)**
1994
Previous code(s): C04-B04A6, C04-B04D3, C04-B04J

C04-H14 # **PAF (Platelet activating factor)**
1994
Previous code(s): C04-B04D3, C04-B04J

C04-H15 # **PA (Plasminogen Activator)**
1994
Previous code(s): C04-B02C3, C04-B04D3

C04-H16 # **SCF (Stem Cell Factor)**
1994
Previous code(s): C04-B04J

C04-H17 # **T-Activin (TA, Thymic factor)**
1994
Previous code(s): C04-B04A6, C04-B04J

C04-H18 # **Activin A (EDF, Erythroid differentiation factor)**
1994
Previous code(s): C04-B04A6, C04-B04J

C04-H19 # **Clotting factors**
Including: thrombin (fibrinogenase, thrombase), prothrombin (thrombinogen, Factor II), fibrin, fibrinogen (Factor I), Factor III (tissue thromboplastin, tissue factor), Factor V (proaccelerin, accelerator globulin (AcG), labile factor), Factor VII (proconvertin, thrombokinase, autoprothrombin I, serum prothrombin conversion accelerator (SPCA), stable factor), Factor VIII (antihemophilic globulin (AHG), antihemophilic factor A), Factor IX (plasma thromboplastin component (PTC), autoprothrombin II, Christmas factor, antihemophilic factor B), FactorX (stuart factor, autoprothrombin C, Prower factor, Stuart-Prower factor, thrombokinase), Factor XI (plasma thromboplastin antecedent (PTA), antihemophilic factor C), Factor XII (Hageman factor, glass contact, activation factor), Factor XIII (fibrin stabilising factor (FSF), fibrinase, Laki-Lorand factor (LLF), transglutaminase) and the platelet factors 1, 2, 3 & 4 etc. N.B. Factor IV, which, is calcium, is coded C05-A01B. The clot-dissolving proteolytic enzyme plasmin (fibrinolysin) and plasminogen are coded C04-L05C.
1994
Previous code(s): C04-B02C3, C04-B02D2, C04-B04D3, C04-C02B3

C04-H20 # **Adhesion and motor molecules general and other**
e.g. LFA (lymphocyte function associated antigen), ICAM/VCAM (intercellular/vascular cell adhesion molecule).
1994
Previous code(s): C04-B04A6, C04-B04C2

C04-H20A # **. Fibronectin**
1994
Previous code(s): C04-B04A6

C04-H20B # **. Vitronectin**
1994
Previous code(s): C04-B04A6

C04-H20C # **. Muscle proteins general**
2002

C04-H20C1 # **.. Actin**
2002

C04-H20C2 # **.. Myosin**
2002

C04-H20C3 # **.. Tropomyosin**
2002

C04-H21 # **Integrins**
2002

C04-J **HORMONES**
1994

C04-J01 # **Hormones general and other**
Hormones which are not covered by the C04-J03, C04-J04 and C04-J05 general sub-headings and are not represented in C04-J06 to C04-J18 are coded here. e.g. generic terms such as hypothalamic, adrenergic, neuropeptide, gastrointestinal and insect hormones.
1994
Previous code(s): C04-B02D

C04-J02 **Steroidal hormones (no structure)**
Includes all steroids where no structure is given.
1994
Previous code(s): C04-B02D1

C04-J03 # **Pancreatic hormone general and other**
Including pancreatic polypeptide.
1994
Previous code(s): C04-B02D2

C04-J03A # **. Insulin**
1994
Previous code(s): C04-B02D2

C04-J03B # **. Glucagon**
1994
Previous code(s): C04-B02D2

C04-J04 # **Thyroid and parathyroid general and other**
N.B.thyroxine is coded C10-B2E.
1994
Previous code(s): C04-B02D3

C04-J04A # **. Calcitonin**
1994
Previous code(s): C04-B02D3

C04-J04B # **. Parathyroid hormone**
1994
Previous code(s): C04-B02D3

C04-J05 # **Pituitary gland hormones general and other**
Including prolactin and human growth hormone.
1994
Previous code(s): C04-B02D4

C04-J05A # **. Oxytocin**
1994
Previous code(s): C04-B02D4

C04-J05B # **. ADH (Antidiuretic hormone)**
Also known as vasopressin.
1994
Previous code(s): C04-B02D4

C04-J05D # **. ACTH (Adrenocorticotropic hormone, adrenocorticotropin)**
1994
Previous code(s): C04-B02D4

C04-J05F # **. TSH (Thyroid Stimulating Hormone)**
1994
Previous code(s): C04-B02D4

C04-J05G # **. MSH (Melanocyte stimulating hormone)**
1994
Previous code(s): C04-B02D4

C04-J05H # **. Gonadotropins**
Including FSH (=follicle stimulating hormone), LH (=luteinising hormone), HMG (=human menopausal gonadotropin).
1994
Previous code(s): C04-B02D4

C04-J05J # **. STH (Somatotropic growth hormone)**
1994
Previous code(s): C04-B02D4

C04-J06 # **CRH (Corticotropin-releasing hormone)**
Hormones covered by C04-J06 to C04-J18 are specific and other than steroidal, pancreatic, thyroid, parathyroid, and pituitary gland hormones.
1994
Previous code(s): C04-B02D

C04-J07 # **GN-RH (Gonadotropin-releasing hormone), LH-RH (Luteinising hormone-releasing hormone)**
1994
Previous code(s): C04-B02D

C04-J08 # **TRH (Thyrotropin-releasing hormone)**
1994
Previous code(s): C04-B02D

C04-J09 # **GH-RH, GH-RF, SRF (Growth hormone-releasing hormone/factor, somatotropin-releasing factor)**
1994
Previous code(s): C04-B02D

C04-J10 # **Somatostatin**
1994
Previous code(s): C04-B02D

C04-J11 # **Endorphins/enkephalins**
1994
Previous code(s): C04-B02D

C04-J12 # **Gastrin/Secretin/Motilin**
1994
Previous code(s): C04-B02D

C04-J13 # **Cholecystokinin (CCK-PZ, Pancreozymin)**
1994
Previous code(s): C04-B02D

C04-J14 # **Tachykinins (Substance p = SP)**
1994
Previous code(s): C04-B02D

C04-J15 # **Neurotensin**
1994
Previous code(s): C04-B02D

C04-J16 # **Ecdysone**
1994
Previous code(s): C04-B02D

C04-J17 # **Juvenile hormone**
1994
Previous code(s): C04-B02D

C04-J18 # **Angiotensin**
1994
Previous code(s): C04-B02D

C04-J19 # **Melanin concentrating hormone**
Also known as MCH, a 19 amino acid cyclic neuropeptide that is expressed mainly in the hypothalamus.
2005
Previous code(s): C04-B02D, C04-J01

C04-J20 # **Phytohormones (no structure)**
Includes cytokinins, auxins and other plant hormones where no structure is specified.
2014

C04-J99 # **Prohormone**
e.g. progastrin, procalcitonin. To be coded in conjunction with the active form of the appropriate hormone.
2018

C04-K **RECEPTORS**
1994

C04-K01 # **Receptor general and other**
Including orphan G-protein coupled receptors CD4:(1) is coded here when described simply as a receptor.(2) is coded C04-K01U when described as a viral receptor.
1994
Previous code(s): C04-B04A6

C04-K01A # **. Parasympathetic receptor (cholinergic receptor)**
1994
Previous code(s): C04-B04A6

C04-K01B # **. Sympathetic receptor (adrenergic receptor, alpha and beta)**
1994
Previous code(s): C04-B04A6

C04-K01C # **. Dopamine receptor**
1994
Previous code(s): C04-B04A6

C04-K01D # **. Serotonin (5HT) receptor**
1994
Previous code(s): C04-B04A6

C04-K01F # **. Histamine receptor**
1994
Previous code(s): C04-B04A6

C04-K01G # **. Interleukin receptor**
1994
Previous code(s): C04-B04A6

C04-K01H # **. Prostaglandin/leukotriene/ thromboxane receptor**
1994
Previous code(s): C04-B04A6

C04-K01J # **. Growth factor receptor**
1994
Previous code(s): C04-B04A6

C04-K01K # **. Other modifier of cell function and growth receptor**
1994
Previous code(s): C04-B04A6

C04-K01L # **. Steroid receptor**
e.g. mineralocorticoid, corticosteroid, estrogen receptor.
1994
Previous code(s): C04-B04A6

C04-K01L1 # **.. Androgen receptors**
2005

C04-K01L2 # **.. Estrogen receptors**
2005

C04-K01L3 # **.. Corticosteroid receptors**
2005

C04-K01L4 # **.. Other steroid receptors**
2005

C04-K01M # **. Insulin receptor**
1994
Previous code(s): C04-B04A6

C04-K01N # **. Angiotensin receptor**
1994
Previous code(s): C04-B04A6

C04-K01P # **. Other hormone receptor**
1994
Previous code(s): C04-B04A6

C04-K01Q # **. Lipoprotein (LDL, HDL) receptor**
1994
Previous code(s): C04-B04A6

C04-K01R # **. Blood cell or blood cell antigen receptor**
1994
Previous code(s): C04-B04A6

C04-K01S # **. Cancer cell or cancer cell antigen receptor**
1994
Previous code(s): C04-B04A6

C04-K01T # **. Bacterial or bacterial antigen receptor**
1994
Previous code(s): C04-B04A6

C04-K01U # **. Viral or viral antigen receptor**
1994
Previous code(s): C04-B04A6

C04-K01V # **. Other cell, microbe or antigen receptor**
1994
Previous code(s): C04-B04A6

C04-K01W # **. Antibody receptor**
1994
Previous code(s): C04-B04A6

C04-K01X # **. Non-steroidal nuclear (hormone) receptor**
2002

C04-K01X1 # **.. Peroxisome proliferator activated receptor (orphan receptor)**
Also known as PPAR.
2005

C04-K01X2 # **.. Thyroid receptor**
2005

C04-K01Y # **. G-protein coupled receptor**
2002

C04-K01Y1 # **.. Melanin concentrating hormone receptor**
2005

C04-K01Z # **. Enzyme receptor**
2014

C04-L **ENZYMES**
Enzyme nomenclature is based whenever possible on the classification defined by the Commission on Biochemical Nomenclature.
1994

C04-L01 # **Enzymes, catalytic proteins general and other**
1994
Previous code(s): C04-B02C

C04-L02 # **Coenzymes**
1994
Previous code(s): C04-B02C1

C04-L03 # **Oxidoreductases general and other**
1994
Previous code(s): C04-B02C2

C04-L03A # . **Oxidases**
1994
Previous code(s): C04-B02C2

C04-L03B # . **Peroxidases**
1994
Previous code(s): C04-B02C2

C04-L03C # . **Oxygenases**
Including cytochrome P450.
1994
Previous code(s): C04-B02C2

C04-L03D # . **Dehydrogenases, reductases**
1994
Previous code(s): C04-B02C2

C04-L03E # . **Lipoxygenases**
2002

C04-L04 # **Transferases general and other**
1994
Previous code(s): C04-B02C4

C04-L04A # . **DNA/RNA polymerases**
1994
Previous code(s): C04-B02C4

C04-L04B # . **Reverse transcriptase**
1994
Previous code(s): C04-B02C4

C04-L04C # . **Kinases**
Any of several enzymes that catalyse the transfer of a phosphate group from ATP to a second substrate.
2005
Previous code(s): C04-L04

C04-L05 # **Hydrolases general and other**
1994
Previous code(s): C04-B02C3

C04-L05A # . **Esterases**
Including lipases, nucleases, restriction enzymes, sulfatases, phosphatases.
1994
Previous code(s): C04-B02C3

C04-L05A1 # .. **Phosphodiesterases**
2005

C04-L05A2 # .. **CRISPR system nucleases**
Nucleases specifically for application in CRISPR systems e.g. Cas9 and Cpf1.
2017

C04-L05B # . **Glycosidases**
Including amylases, cellulases, lactases.
1994
Previous code(s): C04-B02C3

C04-L05C # . **Proteases, peptide hydrolases**
Including chymotrypsin, trypsin, papain, fibrinolysin, collagenases, elastases.
1994
Previous code(s): C04-B02C3

C04-L05C1 # .. **Metalloproteases**
2005

C04-L06 # **Lyases**
Including adenyl cyclases, (de)carboxylases, aldolases, dehydratases.
1994
Previous code(s): C04-B02C5

C04-L07 # **Isomerases**
Including racemases, tautomerases, epimerases, mutases.
1994
Previous code(s): C04-B02C6

C04-L08 # **Ligases**
Including synthetases, some carboxylases, aromatase. Excludes synthase.
1994
Previous code(s): C04-B02C7

C04-L09 # **Zymogen and other enzyme precursors**
2002

C04-L10 # **Translocases**
Enzymes in class EC7.
2020

C04-M **ENZYME INHIBITORS**
1994

C04-M01 # **Enzyme inhibitors general and other**
This code is used for enzyme inhibitors with no structure only.
1994
Previous code(s): C04-B04F

C04-N **OTHER PROTEIN/POLYPEPTIDE**
This code is used only when a substance is not better defined in preceding sections, e.g. a protein with adenyl cyclase activity is coded C04-L06 only.
1994

C04-N01 # **Plant protein/polypeptide (No sequence)**
1994
Previous code(s): C04-B04A4,C04-C01

C04-N01A # . **Complete amino acid sequence given**
Codes C04-C01 to C04-C01G are also applied.
1994
Previous code(s): C04-B04A4

C04-N01B # **. Fragments of amino acid sequence given**
1994
Previous code(s): C04-B04A4

C04-N02 # **Animal protein/polypeptide (No sequence)**
1994
Previous code(s): C04-B04A6, C04-C01

C04-N02A # **. Complete amino acid sequence given**
Codes C04-C01 to C04-C01G are also applied.
1994
Previous code(s): C04-B04A6

C04-N02B # **. Fragments of amino acid sequence given**
1994
Previous code(s): C04-B04A6

C04-N03 # **Microorganism protein/polypeptide (No sequence)**
1994
Previous code(s): C04-B04A5,C04-C01

C04-N03A # **. Complete amino acid sequence given**
Codes C04-C01 to C04-C01G are also applied.
1994
Previous code(s): C04-B04A5

C04-N03B # **. Fragments of amino acid sequence given**
1994
Previous code(s): C04-B04A5

C04-N03C # **. Bacterial protein/polypeptide with complete amino acid sequence**
Codes C04-C01 to C04-C01G are also applied.
2006-2010
now coded C04-N03J1

C04-N03D # **. Bacterial protein/polypeptide with fragments of amino acid sequence**
2006-2010
now coded C04-N03J2

C04-N03E # **. Viral protein/polypeptide with complete amino acid sequence**
Codes C04-C01 to C04-C01G are also applied.
2006-2010
now coded C04-N03K1

C04-N03F # **. Viral protein/polypeptide with fragments of amino acid sequence**
2006-2010
now coded C04-N03K2

C04-N03G # **. Fungal protein/polypeptide with complete amino acid sequence**
Codes C04-C01 to C04-C01G are also applied.
2006-2010
now coded C04-N03L1

C04-N03H # **. Fungal protein/polypeptide with fragments of amino acid sequence**
2006-2010
now coded C04-N03L2

C04-N03J # **. Bacterial protein/polypeptide (No sequence)**
2011

C04-N03J1 # **.. Bacterial protein/polypeptide with complete aminoacid sequence**
2011
Previous code(s): C04-N03C

C04-N03J2 # **.. Bacterial protein/polypeptide with fragments of aminoacid sequence**
2011
Previous code(s): C04-N03D

C04-N03K # **. Viral protein/polypeptide (No sequence)**
2011

C04-N03K1 # **.. Viral protein/polypeptide with complete aminoacid sequence**
2011
Previous code(s): C04-N03E

C04-N03K2 # **.. Viral protein/polypeptide with fragments of aminoacid sequence**
2011
Previous code(s): C04-N03F

C04-N03L # **. Fungal protein/polypeptide (No sequence)**
2011

C04-N03L1 # **.. Fungal protein/polypeptide with complete aminoacid sequence**
2011
Previous code(s): C04-N03G

C04-N03L2 # **.. Fungal protein/polypeptide with fragments of aminoacid sequence**
2011
Previous code(s): C04-N03H

C04-N04 # **Protein/polypeptide of undefined origin (No sequence)**
1994
Previous code(s): C04-B04A,C04-C01

C04-N04A # **. Complete amino acid sequence given**
Codes C04-C01 to C04-C01G are also applied.
1994
Previous code(s): C04-B04A

C04-N04B # **. Fragments of amino acid sequence given**
1994
Previous code(s): C04-B04A

C04-N05 # **Lipoprotein**
Also includes lipopeptides.
1994
Previous code(s): C04-B04A,C04-B01B

C04-N06 # **Glycoprotein, peptidoglycan and cytoskeletal proteins**
1994
Previous code(s): C04-B04A

C04-N07 # **Ion channel protein**
2002

C04-N08 **Fusion protein**
2002

C04-N09 # **Molecular chaperones and chaperonins**
E.g. heat shock proteins (HSP).
2005
Previous code(s): C04-N01, C04-N02, C04-N04

C04-N10 **Prions**
Protein pathogen responsible for e.g. Creutzfeldt-Jakob disease and kuru in humans and scrapie in sheep.
2005
Previous code: C04-N02

C04-N11 # **Zinc finger proteins**
Specialized proteins that contain a bound zinc ion or are capable of binding a zinc ion, and are associated with DNA binding proteins.
2005
Previous code(s): C04-N01, C04-N02, C04-N03, C04-N04

C04-N12 # **Transcription factors general**
A protein that binds DNA at a specific promoter or enhancer region where it activates and regulates transcription.
2005
Previous code(s): C04-N01, C04-N02, C04-N03, C04-N04

C04-N13 # **Signalling pathway proteins**
2006

C04-N14 **Peptidomimetics**
2008

C04-N15 **Crystalline form**
Used in conjunction with other specific protein codes for protein crystals.
2010

C04-N16 **Biomarker protein**
Applied with one or more other codes from section C04 which describe the type of biomarker protein e.g. EGFR used as a biomarker for colorectal cancer would be coded with C04-K01J and C04-N16.
2017

C04-P **WHOLE ANIMALS**
E suffix is appended to respective whole animal codes for transgenic animals.
1994

C04-P01 # **Whole animals general and other**
1994
Previous code(s): C04-B04L,C04-B04M

C04-P01A # **. Laboratory experimental animals**
e.g. mice, rats.
1994
Previous code(s): C04-B04L, C04-B04M

C04-P01B # **. Farm animals**
e.g. cows, sheep.
1994
Previous code(s): C04-B04L, C04-B04M

C04-P01C # **. Arthropods**
1994
Previous code(s): C04-B04M

C04-Q **DRUG CONJUGATES GENERAL**
All portions of the conjugate are additionally coded in the relevant sections.
2013

C04-Q01 **Antibody-drug conjugates**
The antibody is additionally coded in section C04-G.
2013

C04-Q02 **Other protein/peptide drug conjugates**
The protein / peptide is also coded in the appropriate section(s) of C04.
2013

C04-Q03 **Synthetic polymer-drug conjugates**
Also includes drug conjugates with polysaccharides. The polymer/polysaccharide is additionally coded in C04.
2013

C04-Q04 **Nucleic acid-drug conjugates**
Applied when both subcodes would be used or when the nucleic acid portion is ambiguously defined. The nucleic acid is additionally coded in section C04-B03 and/or C04-E.
2017

C04-Q04A **. Oligonucleotide-drug conjugates**
The oligonucleotide is additionally coded in section C04-B03.
2025

C04-Q04B **. Polynucleotide-drug conjugates**
The polynucleotide is additionally coded in section C04-E.
2025

C04-Q05 **Proteolysis targeting chimera**
PROTAC (RTM). To be searched alongside the relevant Section C chemical structure codes.
2025

C04-R **BIOSIMILARS**
Includes biobetters. Search in conjunction with relevant C-code(s) for the biosimilar product. Applicable only for explicitly claimed biosimilars.
2016

C05 MISCELLANEOUS

This section covers all inorganic compounds, and also all organic compounds containing elements other than H, C, N, O, S and halogens (other than the exceptions given in the notes).

The order of priorities for this group is generally C01A-B02C > A01A > C01-C08 (e.g. sodium phosphate is only coded as C05-B02A3). The exception to the above is when the anion (of the lower priority) of a metal salt is an important factor in the invention, e.g. effervescent compositions containing sodium bicarbonate are coded C05-C04 and not C05-A01B. Fullerenes and metallocenes are not within the above hierarchy. Sub-group A elements (i.e. metals) when used as salts of organic compounds, are only coded in C05 if the metal is an essential limiting factor of the invention. Otherwise the compound is coded under the parent compound (i.e. acid, alcohol, etc.).

C05-A **METALS AND COMPOUNDS**

C05-A01 **Group 1, 2, 3 general**
May be applied in C as a higher term where both C05-A01A and C05-A01B would be coded
1965

C05-A01A **. Potassium**
This code is not used for organic compounds unless potassium is an essential pharmaceutically active limiting factor of the invention (e.g. K salts used for treating hypokalemia).
1965

C05-A01B **. Group 1a, 2a, 3a excluding K, B, Ra**
This code is not used for organic compounds unless the metal is an essential pharmaceutically active limiting factor of the invention.
1965

C05-A02 **Group 4a, 5a excluding C, Si, N, P, As**

C05-A03 **Transition metals, lanthanides and actinides general**
The generic code C05-A03 is only used for general disclosures which would otherwise require several specific codes. Thus when a specific code is searched the corresponding generic code must also be searched.

C05-A03A . **Manganese (Mn), iron (Fe), copper (Cu), zinc (Zn), mercury (Hg)**
1975

C05-A03A1 .. **Manganese (Mn) compounds**
2005

C05-A03A2 .. **Iron (Fe) compounds**
2005

C05-A03A3 .. **Copper (Cu) compounds**
2005

C05-A03A4 .. **Zinc (Zn) compounds**
2005

C05-A03A5 .. **Mercury (Hg) compounds**
2005

C05-A03B . **Other transition metals, lanthanides - metals and compounds**
1975

C05-A03B1 .. **Titanium (Ti)**
2008

C05-A03B2 .. **Silver (Ag)**
2008

C05-A03B3 .. **Platinum (Pt)**
2008
Previous code(s): C05-A03B

C05-A04 **Radioactive elements and specific isotopes**

C05-A04A . **Deuterium**
2007

C05-A04B . **Tritium**
2007

C05-A04C . **Carbon isotopes**
Excludes Carbon-12
2007

C05-A04D . **Iodine isotopes**
Excludes Iodine-127
2007

C05-A04E . **Other radioactive isotope**
2007

C05-A04F . **Other non-radioactive isotope**
2007

C05-A05 **Alloys**
May be coded in conjunction with additional codes from C05-A when the constituent metals are known.
2018

C05-A06 **Metal chelates**
Both the metal and the chelating agent(s) are also coded.
2019

C05-B **LESS COMMON NON-METALS AND COMPOUNDS**

C05-B01A . **Boron (B) organic**
1965

C05-B01B . **Silicon (Si) organic**
1965

C05-B01C . **Arsenic (As) organic**
1965

C05-B01D . **Selenium (Se), Tellurium (Te), organic**
1965

C05-B01E . **P-C bond heterocyclic**
1965

C05-B01F . **P-C bond aromatic**
1965

C05-B01G . **P-C bond (cyclo)aliphatic**
1965

C05-B01H . **P-Hal bond organic**
1965

C05-B01J . **P-N bond heterocyclic**
1965

C05-B01K . **P-N bond aromatic**
1965

C05-B01L . **P-N bond (cyclo)aliphatic**
1965

C05-B01M . **P-O(S) bond heterocyclic**
1965

C05-B01N . **P-O(S) bond aromatic**
1965

C05-B01P . **P-O(S) bond (cyclo)aliphatic**
1965

C05-B02A . **P and inorganic P compounds general**
The generic code C05-B02A is only used for general disclosures which would otherwise require several specific codes. Thus when a specific code is searched the corresponding generic code must also be searched.
1965

C05-B02A1 .. **P acids production**
1975

C05-B02A2 .. **Ammonium salts of P acids**
This code is used also for mixtures containing only ammonium salts of P acids.
1975

C05-B02A3 .. **P and inorganic P compounds**
1975

C05-B02A4 .. **Fertiliser mixt. contg. P acid (or salt) and N-source**
For mixtures of ammonium salts of phosphoric acid only see C05-B02A2.
1975

C05-B02A5 .. **Fertiliser mixt. contg. P acid (or salt) and non-N-source**
1975

C05-B02B **. Arsenic (As) inorganic**
1965

C05-B02C **. Silicon (Si), selenium (Se), tellurium (Te), boron (B) inorganic, inert gases**
1965

C05-C **MORE COMMON NON-METALS, COMPOUNDS**

C05-C01 **N (ammonia) inorganic**
After CPI Week 197501 ammonium salts of phosphorus acids or fertiliser mixtures containing a phosphorus acid (or salts) and also ammonia (or salt thereof), have been coded C05-B02A4 respectively.
1965

C05-C02 **N (nitrate) inorganic**
1965

C05-C03 **N (others) inorganic**
1965

C05-C04 **CO2, inorganic (bi)(thio)carbonates**
1965

C05-C05 **Inorganic S acids, S oxides**
1965

C05-C06 **Elemental C or S**
1965

C05-C07 **Inorganic compounds containing halogen**
This code is not used for organic compounds unless a halogen is a member of a heterocyclic ring, or forms a part of an anion, and is an essential agrochemically active limiting factor of the invention.
1965

C05-C08 **Other common non-metals, compounds**
1965

C05-U **FULLERENE TYPE CAGE STRUCTURES**
1994

C05-U **General**
1994

C05-U01 **. Other than carbon only**
1994

C05-U02 **. Carbon only**
1994

C05-U03 **. Carbon only nanotubes**
2005

C05-U04 **. Carbon plus heteroatom nanotubes**
2005

C05-U05 **. Other carbon containing 3-D structures**
2005

C05-U05A **.. Nanotubes, nanorods, nanohorns**
2010

C05-U05B **.. Nanofilms**
2010

C05-U05C **.. Nanostructures other than those covered by C05-U05A and C05-U05B**
2010

C05-U06 **. Inorganic nanostructures**
2005

C05-V **METALLOCENES**
2008

C05-V **Metallocenes**
e.g. ferrocenes, titanocenes, zirconocenes.
2008

Previous code(s): C05+

C05-Z **ORGANOMETALS**
2015

C05-Z **Organometal compounds**
Metals/metalloids present in organic compound, excludes B, Si, As, Se, Te and P. To be searched alongside specific codes for relevant metal(s).
2015

C06 HETEROCYCLIC FUSED RING

This section is used for fused heterocyclic rings containing C and any of O, S and N. If any other elements are present, the structure is coded in C05. The specific rings listed in this section include all reduced derivatives and tautomers, unless specifically excluded.

Specific ring systems present in a disclosed and claimed compound are individually coded, but if there is an essential fused heterocyclic ring and either an optional or a variable fused heterocyclic ring, only the essential ring is coded and neither the variable ring nor C06-H. The exception to this is in a composition with a single new/used/produced compound having one essential fused heterocyclic ring and other components with various fused heterocycles - both the specific and C06-H are then coded.

C06-A	**SOLE HETERO(S) OXYGEN**
C06-A01	**1-Benzo-(furan or pyran)**
C06-A02	**Others with 2 rings** (e.g. phenolphthalein)
C06-A03	**With more than 2 rings**
C06-A03A	. **Taxols, taxels** e.g. paclitaxel, docetaxel. Must contain an oxetane ring fused to the taxane skeleton **2006, 2010**
C06-B	**SOLE HETERO(S) SULPHUR**
C06-B01	**With 2 rings**
C06-B02	**With more than 2 rings**
C06-C	**SOLE HETEROS O AND S**
C06-C	**General**
C06-D	**SOLE HETERO(S) NITROGEN**
C06-D01	**Indole**
C06-D02	**Quinoline**
C06-D03	**Isoindole, isoquinoline**
C06-D04	**Others with 2 rings and one N**
C06-D05	**With 2 rings (5+6 membered) and two N**
C06-D06	**With 2 rings (both 6 membered) and two N**
C06-D07	**Others with 2 rings and two N**
C06-D08	**With 2 rings and 3 N**
C06-D09	**With 2 rings and 4 N**
C06-D10	**With 2 rings and >4 N**
C06-D11	**Acridine**
C06-D12	**Dibenzo[b,f]azepine**
C06-D13	**Others with 3 rings and one N**
C06-D14	**Phenazine**
C06-D15	**Carbolines, phenanthrolines**
C06-D16	**Others with 3 rings and two N**
C06-D17	**With 3 rings and >2N**
C06-D18	**With more than 3 rings**
C06-E	**SOLE HETEROS O AND N**
C06-E01	**Benzoxazole, benzisoxazoles**
C06-E02	**Benzoxazines**
C06-E03	**Others with 2 rings**
C06-E04	**Phenoxazine**
C06-E05	**Others with more than 2 rings**
C06-F	**SOLE HETEROS S AND N**
C06-F01	**Benzothiazole, benzisothiazoles**
C06-F02	**Benzothiazines**
C06-F03	**Others with 2 rings**
C06-F04	**Phenothiazine**
C06-F05	**Others with more than 2 rings**
C06-G	**SOLE HETEROS O AND S AND N**
C06-G	**General**
C06-H	**FUSED RING, GENERAL** This code is used for general disclosures when either unspecified fused heterocyclic ring is present or several specific rings are present. Therefore when a specific code is searched, the corresponding generic code must also be searched.
C06-H	**General**
C06-S	**SPIROFUSED FUSED HETEROCYCLES** to be applied in conjunction with specific ring code(s) from C06.
C06-S	**Spirofused fused heterocycles** **2011**

C07 HETEROCYCLICS, MONONUCLEAR

This section is used for monoheterocyclic rings containing C and any of O, S and N. If any other elements are present, the structure is coded in C05 only. Likewise, when a fused heterocyclic ring is present, the structure is coded in C06 only. The specific rings listed in this section include all reduced derivatives and tautomers, unless specifically excluded.

Specific ring systems present in a disclosed and claimed compound are individually coded, but if there is an essential monoheterocyclic ring and either an optional or a variable monoheterocyclic ring, only the essential ring is coded and neither the variable ring nor C07-H. The exception to this is in a composition with a single new/used/produced compound having one essential monoheterocyclic ring and other components with various monoheterocycles - both the specific and C07-H are then coded.

C07-A	**SOLE HETERO(S) OXYGEN**
C07-A01	**Furan excluding tetrahydrofuran**
C07-A02	**Tetrahydro-(furan or pyran) general**
C07-A02A	**. Tetrahydrofuran** **1994** *Previous code(s): C07-A02*
C07-A02B	**. Tetrahydropyran** **1994** *Previous code(s): C07-A02*
C07-A03	**Others with one O** Including pyran.
C07-A04	**With more than one O**
C07-B	**SOLE HETERO(S) SULPHUR**
C07-B01	**Thiophene**
C07-B02	**Others with one S**
C07-B03	**Others with more than one S**
C07-C	**SOLE HETEROS O AND S**
C07-C	**General**
C07-D	**SOLE HETERO(S) NITROGEN**
C07-D01	**With one N, 3 or 4 membered**
C07-D02	**Pyrrole** Excluding pyrrolidine.
C07-D03	**Pyrrolidine**
C07-D04	**Pyridine general** Excluding piperidine.
C07-D04A	**. (Hydro)pyridinium N(V)** **1986**
C07-D04B	**. Pyridine (optionally substituted) production** **1986**
C07-D04C	**. Pyridine (optionally substituted) use** **1986**
C07-D04D	**. Di- and tetrahydropyridine (optionally substituted)** **1986**
C07-D05	**Piperidine**
C07-D06	**With one N, > 6-membered**
C07-D07	**With > one N, less than 5-membered**
C07-D08	**Pyrazole**
C07-D09	**Imidazole**
C07-D10	**Pyr(id)azine** Excluding piperazine.
C07-D11	**Piperazine**
C07-D12	**Pyrimidine**
C07-D13	**Others with more than one N**
C07-E	**SOLE HETEROS O AND N**
C07-E01	**With one O and one N, < 6-membered**
C07-E02	**Oxazines** Excluding morpholine.
C07-E03	**Morpholine**
C07-E04	**Other heterocyclics, mononuclear - sole heteros O and N**
C07-F	**SOLE HETEROS S AND N**
C07-F01	**With one S and one N, < 6-membered**
C07-F02	**Thiazines**
C07-F03	**Other heterocyclics, mononuclear - sole heteros S and N**
C07-G	**SOLE HETEROS O AND S AND N**
C07-G	**General**
C07-H	**MONONUCLEAR HETEROCYCLICS GENERAL** This code is used for general disclosure when either unspecified monoheterocyclic ring system is present in the molecule, or several rings are present. Therefore the generic code must be searched every time when a specific code is searched.

C07-H	**Heterocyclic ring general**
C07-H01	**Ring linked directly to -C(=O)-, -C(=S)-, -C(=N-)- or -CN** **1975**
C07-H02	**Ring linked directly to heteroatom** **1975**
C07-H03	**Ring linked via aliphatic chain only to heteroatom, -C(=O)-, -C(=S)-, -C(=N)- or CN** **1975**
C07-H04	**Other rings** **1975**
C07-S	**SPIROFUSED MONOCYCLIC HETEROCYCLES** To be applied in conjunction with specific ring code(s) from C07.
C07-S	**Spirofused monocyclic heterocycles** **2011**

C08 AROMATICS, POLYCARBOCYCLIC

This section covers compounds containing more than two carbocyclic rings fused together, at least one of which is 6-membered with 3 conjugated double bonds (or quinone derivatives thereof). Mono- and bicyclo-aromatics are coded in C10.

C08-A	**At least 6 rings fused**
C08-B	**Five rings fused**
C08-C	**4 RINGS FUSED**
C08-C01	**6:6:6:6 carbon atoms per ring**
C08-C02	**Other aromatics, polycarbocyclic - 4 rings fused**
C08-D	**3 RINGS FUSED**
C08-D01	**6:6:7 carbon atoms per ring**
C08-D02	**6:6:6 carbon atoms per ring**
C08-D03	**Other aromatics, polycarbocyclic - 3 rings fused**
C08-H	**FUSED AROMATIC SYSTEM GENERAL** **2002**
C08-S	**SPIROFUSED POLYCYCLIC AROMATIC RINGS** To be applied in conjunction with specific ring code(s) from C08.
C08-S	**Spirofused polycyclic aromatic rings** **2011**

C09 ALICYCLICS, POLYCARBOCYCLIC

This section covers compounds containing more than two carbocyclic rings fused together, other than aromatics (see C08). Mono- and bicyclic compounds are coded in C10.

C09-A	**At least 6 rings fused**
C09-B	**Five rings fused**
C09-C	**4 RINGS FUSED**
C09-C01	**6:6:6:6 carbon atoms per ring**
C09-C02	**Other alicyclics, polycarbocyclic - 4 rings fused**
C09-D	**3 RINGS FUSED**
C09-D01	**6:6:6 carbon atoms per ring**
C09-D02	**Other alicyclics, polycarbocyclic - 3 rings fused**
C09-H	**FUSED ALICYCLIC SYSTEM GENERAL** **2002**
C09-S	**SPIROFUSED POLYCYCLIC ALICYCLIC RINGS** To be applied in conjunction with specific ring code(s) from C09.
C09-S	**Spirofused polycyclic alicyclic rings** **2011**

C10 AROMATICS AND CYCLOALIPHATICS (MONO AND BICYCLIC ONLY), ALIPHATICS

In this section compounds are coded according to the type of functional group present. Only one code is assigned to a specific compound according to the rule of priorities: A > B > C, and 1 > 2 > 3 etc. Thus C10-A01 is the highest, and C10-J02 the lowest priority code. For acidic or basic salts see the parent compounds (i.e. amines, acids, etc.). For all cyclic derivatives of the groups listed in section C10 see C01 to C07. For groups not listed in section C10, e.g. semicarbazone, the highest priority segment is coded, in this case as C10-A13D.

C10-A	**RARER CHEMICAL GROUPS GENERAL** Oxygen atoms may be replaced by S, where applicable.
C10-A01	**Sulfonium, iodonium, free radicals, carbonium, oxonium, etc.**
C10-A02	**Halogen bonded to Hal, N or O** For halides of acids other than carboxylic (C10-A25) or those containing N-X or O-X (X = halogen) bond (C10-A02) the parent acid is coded. For example a sulfenyl halide is coded C10-A09C, a chloroformate C10-A11B and a carbamoyl halide C10-A12C.
C10-A03	**Nitrogen oxide, nitroso** Includes nitramines
C10-A04	**Peroxide, polysulfide** Also includes hydroperoxides.
C10-A05	**Nitrate, nitrite**
C10-A06	**Quinone** Including all derivatives except those with higher priority.
C10-A07	**Sugars (general)** Only 4 or more carbon monosacccharides with a free keto or aldehyde group together with their oxidised, reduced and substituted derivatives code here. Sugars in which at least one of the aldehyde / keto groups have been converted into an acetal / ketal (i.e. exist in cyclic form) code in C07-A02.

C10-A07A . **Unmodified sugars**
Includes ethers and esters thereof. 7 or more carbon sugars are coded C10-A07E.
2005

C10-A07B . **Sugar alcohols**
Includes ether and ester derivatives. Derivatives in which one or two of the hydroxy groups have been replaced by N additionally code C10-A07D. Derivatives in which one or two of the hydroxy groups have been replaced by atoms other than H or N (including 7 or more carbon sugar alcohols) additionally code C10-A07E. Inositol is coded C10-E04A.
2005

C10-A07C . **Sugar acids**
Includes ether and ester derivatives. Derivatives in which one or two of the hydroxy groups have been replaced by N additionally code C10-A07D. Derivatives in which one or two of the hydroxy groups have been replaced by atoms other than H or N (including 7 or more carbon sugar acids) additionally code C10-A07E. Uronic acids which contain a free aldehyde or keto group (even if represented as a cyclic hemi-acetal in the source material) code here but those in which the hemi-acetal OH has been converted into an ether or ester code in C07-A02. Lactones of sugar alcohols code in the C07-A section.
2005

C10-A07D . **Sugar amines**
Used for 4 or more carbon monosaccharides with a free aldehyde or keto group (even if represented as a cyclic hemi-acetal in the source material) or an oxidised or reduced derivative thereof in which one or two of the O atoms have been replaced by nitrogen. If the sugar contains 7 or more carbons it additionally codes C10-A07E. If the sugar is an oxidised sugar it additionally codes C10-A07C. If the sugar is a reduced sugar it additionally codes C10-A07B.
2005

C10-A07E . **Other sugar derivatives**
Used for 4 or more carbon monosaccharides with a free aldehyde or keto group (even if represented as a cyclic hemi-acetal in the source material) or an oxidised or reduced derivative thereof in which one or two of the O atoms have been replaced by atoms other than H, or N. Additionally all 7 or more carbon non-cyclic monosaccharides code here. If the sugar is an oxidised sugar it additionally codes C10-A07C. If the sugar is a reduced sugar it additionally codes C10-A07B.
2005

C10-A08 **Amide of sulfur acid**

C10-A09A . **(Thio)Sulfuric(ous) acid**
Including all derivatives except those with higher priority.
1965

C10-A09B . **(Thio)Sulfonic acid general**
Including all derivatives except for those with higher priority.
1965

C10-A09C . **Other S acids**
Including all derivatives except those with higher priority.
1965

C10-A10 **Sulfone, sulfoxide**

C10-A11A . **Thiocarbonic acid**
Including all derivatives except those with higher priority.
1965

C10-A11B . **Carbonic acid**
Includes haloformates.
1965

C10-A12A . **Dithiocarbamic acid**
Including all derivatives except those with higher priority.
1965

C10-A12B ' **Monothiocarbamic acid**
Including all derivatives except those with higher priority.
1965

C10-A12C . **Carbamic acid**
Including all derivatives except those with higher priorities.
1965

C10-A13A . **(Iso)thiourea**
1965

C10-A13B . **(Iso)urea general**
Generic codes are only used for general disclosures which would otherwise require several specific codes. When a specific search is made, the corresponding generic code must also be searched.
1965

C10-A13C . **Unsubstituted urea**
1975

C10-A13D . **Other (iso)urea compounds**
1975

C10-A14 **(Iso)cyanate, thiocyanide**

C10-A15 **(Iso)cyanide**

C10-A16 **Azide, azo diazo(nium)**

C10-A17 **Biguanide, guanidine, amidine**

C10-A18 **Hydroxylamine**
Hydroxylamine itself is coded C05-C03.

C10-A19 **Hydrazine**
Hydrazine itself is coded C05-C03.

C10-A20 **Imine**

C10-A21 **Quaternary ammonium (bis or poly)**
When a patent claims amines and their quaternary ammonium salts, only the amines are coded. Two searches must be made in order to obtain all relevant quaternary ammonium compounds.

C10-A22 **Quaternary ammonium (mono)**

C10-A23 **Acetal, ketal**

C10-A24 **Imide**

C10-A25 **Acid anhydride, halide (carboxylic only)**
For halides of acids other than carboxylic (C10-A25) or those containing N-X or O-X (X = halogen) bond (C10-A02) the parent acid is coded. For example a sulfenyl halide is coded C10-A09C, a chloroformate C10-A11B and a carbamoyl halide C10-A12C.

C10-B **AMINES**

C10-B01 **Polyamine general**
1986

C10-B01A . **Polyamines, at least 1 amine aromatic**
1965

C10-B01B . **Polyamines with no amine aromatic**
1965

C10-B02 **Amino-acid, -ester or -amide general**
Oxygen atoms in the acid/ester/amide portion may be replaced by S where applicable.
1986

C10-B02A . **Amino-acid, -ester or -amide (amine aromatic)**
1965

C10-B02B . **Amino-acid, -ester or amide (amine not aromatic) general**
1965

C10-B02C . **Mixtures containing at least 3 naturally occurring amino acids**
1975

C10-B02D . **Sulfur-containing amino acids**
Including amides and esters of the acid group(s).
1975

C10-B02E . **Ring-containing amino acid with free acid group or salt**
1975

C10-B02F . **Ring-containing amino amide**
1975

C10-B02G . **Ring-containing amino ester**
1975

C10-B02H . **Optionally esterified or etherified hydroxy amino acids**
Including amides and esters of the acid group(s).
1975

C10-B02J . **Other amino acids**
Including amides and esters of the acid group(s).
1975

C10-B03 **Amino-phenol, -alcohol or -ether general**
Oxygen atoms may be replaced by S, where applicable.
1986

C10-B03A . **Amino-phenol, -alcohol or -ether (amine aromatic)**
1971

C10-B03B . **Amino-phenol, -alcohol or -ether (amine not aromatic)**
1971

C10-B04 **Amine mono, general**
1986

C10-B04A . **Other aromatic amines**
1971

C10-B04B . **Other non-aromatic amines**
1971

C10-C **CARBOXYLIC ACIDS**

C10-C01 **Thiocarboxylic acid**

C10-C02 **Polycarboxylic acid**

C10-C03 **Carboxylic acid and phenol present**
Or phenolic ester or ether. Oxygen atoms may be replaced by S.

C10-C04 **Other carboxylic acids general**

C10-C04A **. Carboxylic acid and cycloaliphatic system present**
1975

C10-C04B **. Hydroxy, aldehyde or keto carboxylic acid and carbocyclic aromatic ring system present**
Including esters and ethers (of hydroxy) and thio derivatives.
1975

C10-C04C **. Other carboxylic acid and carbocyclic aromatic ring system present**
1975

C10-C04D **. Acyclic hydroxy**
Including acyclic ether (of hydroxy) and thio derivatives.
1975

C10-C04E **. General acyclic monocarboxylic acid**
General acyclic monocarboxylic acid (not substituted by hydroxy, aldehyde, keto or their ethers and/or thio derivatives).
1975

C10-C04E1 **.. Substituted acyclic monocarboxylic acid**
2006

C10-C04E2 **.. Polyunsaturated fatty acid**
2006

C10-C04E3 **.. Monounsaturated fatty acid**
2006

C10-C04E4 **.. Other unsaturated monocarboxylic acid**
2006

C10-C04E5 **.. Saturated fatty acid**
2006

C10-C04E6 **.. Other saturated monocarboxylic acid**
2006

C10-D **ALDEHYDES AND CARBOXYLIC AMIDES**
Oxygen atoms may be replaced by S, where applicable. These generic codes are only used for general disclosures which would otherwise require several specific codes. When a specific search is made, corresponding generic codes must also be searched.

C10-D01 **Aldehydes**

C10-D02 **Carboxylic amide, thio**

C10-D03 **Carboxylic amides**

C10-E **HYDROXY COMPOUNDS**
Oxygen atoms may be replaced by S, where applicable

C10-E01 **Thiophenols**

C10-E02 **Phenols**

C10-E03 **Thioalcohols**

C10-E04 **Alcohols general**
Generic codes are only used for general disclosures which would otherwise require several specific codes. When a specific search is made, the corresponding generic codes must also be searched.

C10-E04A **. Alcohols containing hydroxy attached directly to alicyclic ring**
Including inositol.
1975

C10-E04B **. Alcohols containing carbocyclic ring(s)**
1975

C10-E04C **. Polyalcohols and ethers and esters thereof**
1975

C10-E04D **. Other alcohols**
1975

C10-F **KETONES**

C10-F01 **Thioketones**

C10-F02 **Ketones**

C10-G **CARBOXYLIC ESTERS AND NITRO**
Oxygen atoms may be replaced by S, where applicable.

C10-G01 **Thiocarboxylic esters**

C10-G02 **Carboxylic esters**

C10-G03 **Nitro**

C10-H **ETHERS AND HALOGENS**
Oxygen atoms may be replaced by S, where applicable.

C10-H01 **Ethers**

C10-H02 **Halogen general**
1986

C10-H02A **. F linked to aromatic ring**
1965

C10-H02B **. F not linked to aromatic ring**
1965

C10-H02C **. Br or I linked to aromatic ring**
1965

C10-H02D	**. Br or I not linked to aromatic ring** **1965**
C10-H02E	**. Cl linked to aromatic ring** **1965**
C10-H02F	**. Cl not linked to aromatic ring** **1965**
C10-J	**HYDROCARBONS**
C10-J01	**-C≡C- may form part of alicyclic ring** **1965**
C10-J02	**Other hydrocarbons** **1965**
C10-J02A	**. Terpenes or terpenoids** General terpenes or terpenoids of purely hydrocarbon content. **2013**

C11 PROCESSES, APPARATUS

C11 codes are only used when the inventive feature of the patent cannot be completely described in terms of chemical descriptors in C01 to C10. Test **methods** must be claimed for C11 codes to be applied, i.e. if a compound can be used as a reagent but the test is not claimed, only C12-K04+ codes are applied.

C11-A	**FERMENTATION GENERAL** Includes fermentation process where microorganisms are not specified **2012**
C11-A01	**Using microorganisms** **1994**
C11-A01A	**. Using bacteria** **2006**
C11-A01B	**. Using viruses** **2006**
C11-A01C	**. Using fungi** **2006**
C11-A02	**Using enzymes** **1994**
C11-A02A	**. Using oxidoreductases general** **2006**
C11-A02A1	**.. Using oxidases** **2006**
C11-A02A2	**.. Using peroxidases** **2006**
C11-A02A3	**.. Using oxygenases** **2006**
C11-A02A4	**.. Using dehydrogenases, reductases** **2006**
C11-A02A5	**.. Using lipoxygenases** **2006**
C11-A02B	**. Using transferases general** **2006**
C11-A02B1	**.. Using DNA/RNA polymerases** **2006**
C11-A02B2	**.. Using reverse transcriptases** **2006**
C11-A02B3	**.. Using kinases** **2006**
C11-A02C	**. Using hydrolases general** **2006**
C11-A02C1	**.. Using esterases** **2006**
C11-A02C2	**.. Using glycosidases** **2006**

C11-A02C3 .. **Using proteases/peptide hydrolases**
2006

C11-A02D . **Using lyases**
2006

C11-A02E . **Using isomerases**
2006

C11-A02F . **Using ligases**
2006

C11-A03 **Using algae**
2010

C11-A04 **Fermentation apparatus**
Apparatus or device for culturing microorganisms e.g. culturing device of alimentary canal nematodes.
2012

C11-A04A . **Cell/tissue culture apparatus**
Method and apparatus for culturing and processing of biological cells excluding tissue engineering (which codes 11-C04G). E.g. animal cells and other microbial cells.
2014

C11-B **EXTRACTION, SEPARATION, RECOVERY, PURIFICATION, CRYSTALLISATION**
If part of a diagnostic process see C11-C08D.

C11-B01 **Separation of stereoisomers by a biological method**
2006

C11-B02 **Separation of stereoisomers by other method**
2006

C11-B03 **Other separations**
also for separation of E,Z and cis/trans isomers.
2006

C11-B03A . **Method or device for separation of biological molecules**
Includes methods or devices for extraction of biological substances such as proteins and nucleic acids.
2012

C11-B03B . **Device/methods for concentrating of molecules**
Includes techniques involving concentrating procedure, only for use when the Novelty of the invention.
2013

C11-B03C . **Method or device for extraction of active substances from plant**
Patents dealing with extraction of active agents from plants.
2016

C11-B03D . **Method or device for extraction of active substance from animals, arthropods**
Extraction of active substance from animals, arthropods, etc.
2021

C11-B04 **Method or device for removal processes**
A means of destroying or collecting for subsequent safe disposal of harmful / noxious substances. Substance removed and removing agent are additionally coded, even if they only appear in an example.
2006

C11-B05 **Method or device for preservation and/or storage**
Includes devices as well as methods for preservation and storage relating to preservation. General storage containers are coded in C11-C06.
2009

C11-B06 **Method or device for cleaning and/or sterilization**
Method device for cleaning and/or sterilization, such as for medical equipment.
2010

C11-C **GENERAL PROCESS, APPARATUS**

C11-C01 **General chemical processes**
1971

C11-C01A . **Combinatorial chemistry**
2002

C11-C01A1 .. **Library synthesis**
Used when the patent is describing a technique for producing, rather than using a combinatorial library.
2005

C11-C01A2 .. **Liquid-phase synthesis**
Process in which the chemical building blocks are present in solution.
2005

C11-C01A3 .. **Solid-phase synthesis**
Process in which the chemical building blocks are bound to a polymer.
2005

C11-C01A4 .. **Parallel synthesis**
Process in which each separate starting material is present in a different well in a microarray and the reagent is added simultaneously to all of the wells with the results that each product is present in a different well.
2005

C11-C01A5 .. **High-volume synthesis**
Process in which very large numbers of compounds are produced from a large variety of starting materials.
2005

C11-C01B . **Apparatus for combinatorial chemistry**
2002

C11-C01C . **Other processes**
2002

C11-C01C1 .. **Stereo-specific reactions**
2006

C11-C01C2 .. **Stereo-selective reactions**
2006

C11-C01C3 .. **Racemisation**
2012

C11-C01D . **Stereochemistry**
Includes geometrical isomers.
2006

C11-C01E . **Amplification apparatus/process for production**
From 2011, the scope of this code has been extended to cover amplification apparatus for production in addition to processes for the same.
2007
Previous code(s): C11-A02B1

C11-C01F . **Irradiation, photochemistry, photocatalysis**
2026

C11-C02 **Syringes**
Also includes filling/loading of syringes.
1971

C11-C02A . **Hypodermic syringes**
Includes multi-use as well as single-use and moulded disposable syringes.
2005

C11-C02B . **Needles**
Should cover all needles, not just those for syringes. Not for microneedles – these are coded under C12-M02F instead.
2005

C11-C02C . **Syringe components**
2006

C11-C02D . **Syringe/Injector disposal apparatus**
Covers disposal of all injectors, not just syringes. Also includes syringe needle removing devices and sharps container.
2006

C11-C03 **Dispensers**
Includes fertilizer dispensers.
1971

C11-C04 **Machine/device/method for use in/on living body, general**
From 2010, the scope of this code has been extended to cover methods used for therapeutic purposes on animal or human body in addition to machines and devices for the same. Includes both method and devices used for therapeutic purposes on animal or human body. This code can be applied to condoms, external splints, infra-red heat massagers etc, however such items should either contain, be coated with or be used in conjunction with drugs in order for them to be coded in B and/or C.
1971

C11-C04A . **Implant**
1977

C11-C04A1 .. **Stent**
2006

C11-C04B . **Catheter**
Includes cannula.
1977

C11-C04C . **Injection gun, general**
2005

C11-C04D . **Applicator**
Includes spraying apparatus for agrochemicals.
2005

C11-C04E . **Needle-free injector**
A syringe type device that uses applied pressure to inject the drug through the skin, and particularly into the gums during dental procedures.
2005

C11-C04F **. Artificial organs**
Including heart-lung machines, kidney dialysis equipment, pacemakers and artificial livers and skin. Includes production of these organs. Not to be confused with prostheses (coded C12-M17) or implants (coded C11-C04A).
2005

C11-C04G **. Tissue engineering technologies**
Includes wound care technologies (e.g. bone cement), stem cell therapeutic applications, and tissue and organ production (e.g. by inkjet printers and tissue scaffolds).
2007

C11-C04H **. Adaptors, fixing devices, seals**
used for e.g. attaching tubes to syringes, attaching catheter tubes to supports.
2009

C11-C04J **. Cements, putties**
Includes bone cement etc.
2010

C11-C04K **. Bioelectronics and neurostimulation**
Includes electroceuticals, may also be searched with C14-S27.
2015

C11-C04Z **. Non-pharmaceutical alternative therapies**
Includes therapies such as music therapy, laughter therapy, heat therapy, acupuncture and reiki. Does not include electrical or electromagnetic therapies which are coded in C14-S27 with additionally C11-C04 if the apparatus is also claimed.
2012

C11-C05 **Process/ apparatus for producing pharmaceutical, veterinary or agricultural composition**
Includes tabletting machines. Also covers any process for producing drugs or their intermediate products e.g. drug mixer, device for drying a drug, device for crushing a drug.
1971

C11-C06 **Containers, packing, preserving apparatus, storage tanks, transporting apparatus general**
1975

C11-C06A **. Closures, caps**
1977

C11-C06B **. Formulation counting/measuring devices**
e.g. tablet counting machines, cylinders for measuring solutions, weighing devices.
2009

C11-C06C **. Peripheral devices for therapeutic regimens**
Includes stands for e.g. infusion devices, tamper alarms.
2010

C11-C06D **. Labels and labelling devices**
2011

C11-C06E **. Temperature regulation apparatus**
2012

C11-C06Z **. Safety and tamper-proof devices/methods**
Applied with one or more other codes from C11-C02, C11-C03, C11-C04 and/or C11-C06. Includes methods and devices to improve patient safety e.g. alarms for incorrect operation of dispensers. Safety caps, previously coded only in C11-C06A, also now code here.
2017

C11-C07 **Antibody-antigen reaction, precipitation tests; colorimetric, fluorescence, radioactive tracer tests, general**
C11-C07+ and C11-C08+ codes are applied when diagnosis/testing process forms a novel part of an invention.
1975

C11-C07A **. Antigen-antibody reaction general**
Excluding C11-A.
1977

C11-C07A1 **.. Production of antigen for test**
1986

C11-C07A2 **.. Antigen or antibody bound to colour tracer**
1986

C11-C07A3 **.. Antigen or antibody bound to radioactive tracer**
1986

C11-C07A4 **.. Antigen or antibody bound to enzyme tracer**
1986

C11-C07A5 **.. Antigen or antibody bound to fluorescent or chemiluminescent tracer**
1986

C11-C07A6 **.. Antigen or antibody bound to other type of carrier**
e.g. erythrocytes, glass, polymer.
1986

C11-C07A7 **.. Apparatus for antigen-antibody reaction, where the antigen or antibody type or carrier are irrelevant to the invention**
1986

C11-C07B **. Colorimetric tests**
Including fluorescence (excluding B11-C07A).
1977

C11-C07B1 **.. Colorimetric (detection of colour change in a reagent)**
1986

C11-C07B2 **.. Spectrophotometric**
1986

C11-C07B3 **.. Fluorescence**
1986

C11-C07B4 **.. Chemiluminescence**
1986

C11-C07B5 **.. Radioactive tracer other than C11-C07A3**
1986

C11-C07B6 **.. Reflectance, light scattering etc.**
2005

C11-C07B7 **.. Apparatus for colorimetric analysis where the apparatus is the novelty of the invention**
2009

C11-C08 **Other methods/apparatus for testing/detection**
Including new drug screening systems.
1975

C11-C08A **. NMR, mass spectroscopy**
Excluding NMR, mass spectroscopy for gene/protein analysis which is coded under C11-C08G2.
1986

C11-C08B **. Potentiometry, polarography**
1986

C11-C08C **. Sampling device and sampling method for testing**
From 2010, the scope of this code has been extended to cover methods of sampling in addition to devices for the same. Includes devices and method of sampling, wherein the method of collecting samples is for test and detection purposes.
1986

C11-C08C1 **.. Microfluidic devices**
2007

C11-C08C2 **.. Manipulation of samples**
Includes methods or devices for treating biopsy or smear samples to make them easier to view.
2014

C11-C08D **. Separation methods of testing and diagnosis general**
Other than C11-B.
1986

C11-C08D1 **.. Electrophoresis**
1986

C11-C08D2 **.. Chromatography, ion exchange**
Including High Performance Liquid Chromatography (HPLC).
1986

C11-C08D3 **.. Filtration, centrifugation, sedimentation, dialysis**
1986

C11-C08E **. Biological procedures for testing general**
Other than C11-A and C11-C07A.
1986

C11-C08E1 **.. Fermentation of micro-organisms, cell or tissue culture**
e.g. testing antibiotics by cultivation of microorganisms.
1986

C11-C08E2 **.. Noting physiological responses in animals or plants/modelling diseases**
e.g. increased activity, change of habit. Includes AI disease modelling. This code is applied only when the test is the main inventive feature.
1986

C11-C08E3 **.. Enzyme processes other than polarography or enzyme labelling**
Excluding C11-C07A, but including the use of restriction enzymes (endonucleases) and the polymerase chain reaction (PCR). For more specifically described PCR methodologies, up to three additional codes from subsection C11-C08N may be appended (from update 202201).
1986

C11-C08E4 **.. DNA sequencing methods**
Other than those involving enzymes.
1994-2018
Previous code(s): C11-C08, C11-C08E3
Now coded as: C11-C08F7A

C11-C08E5 **.. Nucleic acid hybridisation test methods, use of nucleic acid probes**
1994-2018
Previous code(s): C11-C08, C11-C08E3
Now coded as: C11-C08F8

C11-C08E6 **.. Microarrays and biochips**
2002

C11-C08E7 **.. Agonist/antagonist identification**
2005

C11-C08E8 **.. Biosensor**
To be searched alongside the physicochemical and/or biological parts where present.
2016

C11-C08E9 **.. Protein sequencing method**
Code retired 2018. Now coded C11-C08F7B. All document records from 2018 containing this code will be changed to reflect the updated hierarchy and C11-C08E9 will no longer be searchable.
2018-2018

C11-C08F **. Protein/Gene analysis general**
2002

C11-C08F1 **.. Computational genomics**
2002-2018
Now coded as: C11-C11C1

C11-C08F2 **.. Experimental genomics**
2002

C11-C08F3 **.. Computational proteomics**
2002-2018
Now coded as: C11-C11C2

C11-C08F4 **.. Experimental proteomics**
2002

C11-C08F5 **.. Functional genomics**
2009

C11-C08F6 **.. Functional proteomics**
2009

C11-C08F7 **.. Sequencing methods general**
2019

C11-C08F7A **... DNA/RNA sequencing methods**
Includes Next Generation Sequencing and other high-throughput processing methods.
2019

C11-C08F7B **... Protein sequencing methods**
Replaces the deleted code C11-C08E9. All affected document records from 2018 will be changed to reflect the updated hierarchy and C11-C08E9 will no longer be searchable.
2019

C11-C08F8 **.. Nucleic acid hybridization test methods, use of nucleic acid probes**
2019
Previous code(s): C11-C08, C11-C08E5

C11-C08G **. Structural conformation analyzing method for biomolecules**
Prior to 2011, this code covered structural gene/protein analysis only. From 2011, the scope of this code has been extended to cover structural analysis of all biomolecules. Also includes structural analysis of polysaccharide, nucleic acid, lipid, glycoprotein, glycolipid and RNA molecule.
2002

C11-C08G1 **.. X-ray crystallography**
2002

C11-C08G2 **.. NMR spectroscopy**
2002

C11-C08G3 **.. Electron microscopy**
2002

C11-C08H **. Drug design by computer modelling**
2002

C11-C08J **. Microscopy/ optical processes & apparatus**
2005

C11-C08K **. Other analytical apparatus where the apparatus is the novelty of the invention**
Novel apparatus for colorimetric analysis codes as C11-C07B7.
2009

C11-C08L **. Acoustics**
Includes ultrasound, infrasound and vibration.
2016

C11-C08M **. Calorimetry**
2020

C11-C08N **. Biological testing methodologies**
This code is a section heading only and is not applied to patents. See the relevant C11-C08N sub-codes instead.
2022

C11-C08N1 **.. Thermocycling amplification methods**
For three or more specific sub-codes or for general references to thermocycling methods, only the parent code C11-C08N1 is applied. General references to PCR are searched under C11-C08E3.
2022

C11-C08N1A **... Multiplex PCR**
2022

C11-C08N1B **... Nested PCR**
2022

C11-C08N1C **... Colony PCR**
2022

C11-C08N1D **... Random amplification polymorphism DNA PCR (RAPD-PCR)**
2022

C11-C08N1E **... Simple sequence repeat-anchored PCR (SSR-PCR)**
2022

C11-C08N1F **... Amplified fragment length polymorphism PCR (AFLP-PCR)**
2022

C11-C08N1G **... Amplification of refractory mutation system PCR (ARMS-PCR)**
2022

C11-C08N1H **... Restriction fragment length polymorphism (RFLP)**
Includes Derived Cleaved Amplified Polymorphic Sequences PCR (dCAPS-PCR).
2022

C11-C08N1J **... Ligase chain reaction (LCR)**
2022

C11-C08N1K **... Kompetitive allele specific PCR (KASP)**
Includes allele-specific polymerase chain reaction (ASP-PCR). Code additionally fluorescence (C11-C07B3) for PCR.
2024

C11-C08N2 **.. Isothermal amplification methods, general and other**
For three or more specific sub-codes or general references to isothermal methods, only the parent code C11-C08N2 is applied.
2022

C11-C08N2A **... Loop mediated isothermal amplification (LAMP)**
Also includes RT-LAMP.
2022

C11-C08N2B **... Self-sustained sequence replication (3SR)**
2022

C11-C08N2C **... Strand displacement amplification (SDA)**
2022

C11-C08N2D **... Nucleic acid sequence based amplification (NASBA)**
2022

C11-C08N2E **... Rolling circle amplification (RCA)**
2022

C11-C08N2F **... Multiple displacement amplification (MDA)**
Includes Whole Genome Amplification (WGA), Multiple Annealing and Looping Based Amplification Cycles (MALBAC).
2022

C11-C08N2G **... Helicase dependent amplification (HAD)**
2022

C11-C08N2H **... Ramification amplification method (RAM)**
2022

C11-C08N2J **... Recombinase polymerase amplification (RPA)**
2022

C11-C08N3 **.. Real-time analysis**
To be searched alongside the relevant testing and diagnostic codes when this term is referenced in the source document.
2022

C11-C08N4 **.. Rapid analysis**
To be searched alongside the relevant testing and diagnostic codes when this term is referenced in the source document.
2022

C11-C09 **Other processes, appts.**
Processes and apparatus not covered elsewhere in section 11.
1975

C11-C09A **. Processes**
2006

C11-C09B **. Apparatus**
2006

C11-C10 **Screening general**
2002

C11-C10A **. High throughput screening**
2002

C11-C10B **. High content screening**
Whole cell analysis used in drug screening. Differs from high-throughput screens that are usually homogenous in-vitro assays. Includes the analysis of multiple independent or interacting targets in intact cells using e.g. advanced optical imaging systems, fluorescent-based reagents and advanced informatics tools. Also includes predictive toxicity and ADME (absorption, distribution, metabolism and excretion) screening.
2005

C11-C10C **. Protein/gene libraries**
Collections of protein or nucleic acid fragments and clones used as a tool in biochemical processes.
2005

C11-C10D **. Phage display libraries**
2005

C11-C11 **General computing methods & apparatus**
Includes media and methods for storing, searching and retrieving data and drug databases. Also for computerised pharmacological models.
2005

C11-C11A **. Patient compliance methods & systems**
Methods concerning patient compliance, e.g. medication reminders.
2005

C11-C11B **. Computerised teaching models**
Includes computer simulations used to show drug effects, such as in university courses.
2014

C11-C11C **. Computational protein/nucleic acid analysis**
2019

C11-C11C1 **.. Computational genomics**
2019
Previous code(s): C11-C08F1

C11-C11C2 **.. Computational proteomics**
2019
Previous code(s): C11-C08F3

C11-C12 **Nanotechnology (general)**
Includes nanoswitches made of DNA, nanorobots and DNA origami.
2005

C11-C13 **Particle engineering**
Any process concerned with the design of the physical form of the particles in the dosage (as opposed to the chemical constitution of them). This optimises drug delivery properties of the dosage form.
2005

C11-C14 **Security systems (e.g. biometric data, retinal scanning, authentication of drugs, DNA labelling for security purposes, etc.)**
2008

C11-C15 **Biological tools/models/teaching aids**
Physical entities only.
2011

C11-C15A **. Computerised teaching models**
Includes computer simulations used to show drug effects, such as in university courses.
2014

C11-C16 **Apparatus specifically for pediatrics or geriatrics**
Includes apparatus for neonates and adolescents.
2017

C11-C17 **Bioprinting**
Includes pre- and post-bioprinting procedures. Additionally coded with C11-C04G for tissue engineering via bioprinting, or C11-C04F for printable organs.
2017

C12 DIAGNOSTICS AND FORMULATION TYPES (Therapeutic, Pesticidal, Herbicidal) (pre-1994)

C12-A **ANTIMICROBIAL TYPE**

C12-A01 **Antibacterial**
Antibiotics are only C02. Immunostimulant with C12-A06 (pre-1994).
1965-1993
Now coded as: C14-A1+

C12-A02 **Antifungal, antialgal, antilichen general**
1965-1993
Now coded as: C14-A04+, C14-B08

C12-A02A **. Antialgal**
1986-1993

C12-A02B **. Antilichen**
1986-1993
Now coded as: C14-B08

C12-A02C **. Antifungal**
1986-1993
Now coded as: C14-A04+

C12-A03 **Antileprotic**
1965-1993
Now coded as: C14-A01B1

C12-A04 **Antitubercular**
1965-1993
Now coded as: C14-A01B1

C12-A05 **Antivenereal**
1965-1993
Now coded as: C14-N07C, C14-A01A, C14-A01A5

C12-A06 **Antiviral**
Vaccines are only C02-V. Immunostimulant with B12-A01 (pre-1994).
1965-1993
Now coded as: C14-A02+

C12-A07 **Skin and wound treatment**
1965-1993
Now coded as: C14-N17+

C12-A08 **Antifouling**
Prior to 198601 search C12-A02, C12-N01, C12-N04 and C12-N05.
1986-1993
Now coded as: C12-B15

C12-B **ANTIPARASITIC TYPE**

C12-B01 **Amoebicide**
1965-1993
Now coded as: C14-A03A

C12-B02 **Anthelmintic**
1965-1993
Now coded as: C14-B03

C12-B03 **Antimalarial**
1965-1993
Now coded as: C14-A03B

C12-B04 **Antiparasitic (general), acaricide**
1965-1993
Now coded as: C14-B02

C12-B05 **Coccidiostat**
1965-1993
Now coded as: C14-A03C

C12-B06 **Schistosomicide**
1965-1993
Now coded as: C14-B03A

C12-B07 **Trypanocide**
1965-1993
Now coded as: C14-A03E

C12-C **CNS-ACTIVE TYPE (I)**

C12-C01 **Anesthetic (general)**
1965-1993
Now coded as: C14-C08

C12-C02 **Anesthetic (local)**
1965-1993
Now coded as: C14-C09

C12-C03 **Analeptic**
1965-1993
Now coded as: C14-J01A2

C12-C04 **Antiparkinsonian drug**
1965-1993
Now coded as: C14-J01A3

C12-C05 **Central depressant**
1965-1993
Now coded as: C14-J01B

C12-C06 **Central stimulant**
1965-1993
Now coded as: C14-J01A, C14-J01A1

C12-C07 **Hypnotic**
1965-1993
Now coded as: C14-J01B1

C12-C08 **Sedative**
1965-1993
Now coded as: C14-J01B2

C12-C09 **Synergist**
1965-1993
Now coded as: C14-S09

C12-C10 **Tranquiliser**
1965-1993
Now coded as: C14-J01B4, C14-J01A4, C14-F02D1, C14-J01, C14-J01B3, C14-N16, C14-S07

C12-D **CNS-ACTIVE TYPE (II)**

C12-D01 **Analgesic**
1965-1993
Now coded as: C14-C01

C12-D02 **Antiallergic general**
1965-1993
Now coded as: C14-G02A

C12-D02A **. Autoimmune disease treatment**
See also C12-D03, C12-D07, C12-D09.
1986-1993
Now coded as: C14-G02D

C12-D02B **. Immune suppressant**
Immunomodulatory is also coded C12-A01 and C12-A06.
1986-1993
Now coded as: C14-G02, C14-G03, C14-G02C

C12-D02C **. Complement inhibitor**
1986-1993
Now coded as: C14-G02D

C12-D02D **. Anti slow-releasing-substance of anaphylaxis (SRS-A)**
1986-1993
Now coded as: C14-G02B

C12-D03 **Antiarthritic**
1965-1993
Now coded as: C14-C09+

C12-D04 **Anticonvulsant**
1965-1993
Now coded as: C14-J07

C12-D05 **Antiemetic**
1965-1993
Now coded as: C14-E05

C12-D06 **Antihistamine general**
For gastric secretion inhibitor, see also C12-J02.
1965-1993
Now coded as: C14-L10

C12-D06A **. H2 secretion inhibitor**
1986-1993
Now coded as: C14-L12

C12-D06B **. H1 inhibitor**
1986-1993
Now coded as: C14-L11

C12-D07 **Antiinflammatory**
1965-1993
Now coded as: C14-C02, C14-C03, C14-C04

C12-D08 **Antipyretic**
1965-1993
Now coded as: C14-C05, C14-C06

C12-D09 **Antirheumatic**
1965-1993
Now coded as: C14-C07

C12-D10 **Convulsant**
1965-1993
Now coded as: C14-J06

C12-E **AUTONOMIC N.S. ACTIVE TYPE**

C12-E01 **Autonomic N.S. active general**
1965-1993
Now coded as: C14-F02, C14-J02

C12-E02 **Muscle relaxant, inotropic**
See also C12-F01.
1965-1993
Now coded as: C14-J05, C14-J05A, C14-J05C, C14-J05D

C12-E03 **Mydriatic/myopic**
1965-1993
Now coded as: C14-J05B

C12-E04 **Parasympathetic blocker**
1965-1993
Now coded as: C14-J02B+, C14-J05D

C12-E05 **Parasympathetic stimulant, acetyl choline potentiator**
1965-1993
Now coded as: C14-J02A+

C12-E06 **Sympathetic blocker general**
1965-1993
Now coded as: C14-J02D, C14-J02D3

C12-E06A **. Alpha-adrenergic blocker**
1986-1993
Now coded as: C14-J02D1

C12-E06B **. Beta-adrenergic blocker**
1986-1993
Now coded as: C14-J02D2

C12-E07 **Sympathetic stimulant, adrenergic stimulant, adrenaline potentiator**
1965-1993
Now coded as: C14-J02C+

C12-E08 **Ulcers (peptic and duodenal)**
1965-1993
Now coded as: C14-E08

C12-E09 **Uterus active**
1965-1993
Now coded as: C14-N14

C12-F **CARDIOACTIVE TYPE**
Now coded as: C14-F

C12-F01 **Cardioactive general**
1965-1993
Now coded as: C14-F01

C12-F01A **. Arryhthmia treatment**
1986-1993
Now coded as: C14-F01A

C12-F01B **. Cardiac stimulant**
Including treatment of myocardial infarct, myocardial contraction intensifying, cardiac arrest treatment, cardiotonic, cardiac insufficiency treatment.
1986-1993
Now coded as: C14-F01B

C12-F01C . **Cardiovascular, inotropic**
Prior to 8602 coded as C12-E02.
1986-1993
Now coded as: C14-F01C

C12-F02 **Coronary dilator**
1965-1993
Now coded as: C14-F01D,C14-F01E

C12-F03 **Ganglion blocker**
1965-1993
Now coded as: C14-F01F

C12-F04 **Hypertensive**
1965-1993
Now coded as: C14-F02A

C12-F05 **Hypotensive general**
1965-1993
Now coded as: C14-F02B

C12-F05A . **Angiotensin converting enzyme inhibitor, renin inhibitor**
1986-1993
Now coded as: C14-F02B1

C12-F05B . **Calcium entry blockers**
C12-G01 may also be searched.
1986-1993
Now coded as: C14-F02B2

C12-F06 **Vasoconstrictor**
1965-1993
Now coded as: C14-F02C

C12-F07 **Vasodilator**
1965-1993
Now coded as: C14-F02D+

C12-G **METABOLISM ACTIVE TYPE**

C12-G01 **Antimetabolite general**
1965-1993
Now coded as: C14-J04, C14-L06, C14-L07, C14-L08

C12-G01A . **Antihormone, antiandrogenic, antiestrogenic, antiprogestational, adrenal cortex inhibitor**
1986-1993
Now coded as: C14-D02+

C12-G01B . **Enzyme inhibitor**
1986-1993
Now coded as: C14-D03,C14-D04

C12-G01B1 .. **Antioxidoreductase**
1986-1993
Now coded as: C14-D05+

C12-G01B2 .. **Antitransferase**
1986-1993
Now coded as: C14-D06+

C12-G01B3 .. **Antihydrolase**
1986-1993
Now coded as: C14-D07+

C12-G01B4 .. **Antilyase**
1986-1993
Now coded as: C14-D08

C12-G01B5 .. **Antiisomerase**
1986-1993
Now coded as: C14-D09

C12-G01B6 .. **Antiligase (antisynthetase)**
1986-1993
Now coded as: C14-D10

C12-G02 **Choleretic and liver**
1965-1993
Now coded as: C14-N12

C12-G03 **Diuretic and kidney**
For urinary tract infections see C12-A01.
1965-1993
Now coded as: C14-F02E, C14-N10

C12-G04 **Hormone adrenocortical**
Including Addison's disease treatment (general).
1965-1993
Now coded as: C14-D01, C14-D01D, C14-D01E, C14-J03

C12-G04A . **Anti-aging, anti-senility, anti-Alzheimer's disease**
Including non-hormonal treatment.
1986-1993
Now coded as: C14-J01A4

C12-G04B . **Androgenic**
1986-1993
Now coded as: C14-D01A

C12-G04C . **Estrogenic**
1986-1993
Now coded as: C14-D01B

C12-G04D . **Progestational**
1986-1993
Now coded as: C14-D01C

C12-G05 **Leukaemia treatment**
1965-1993
Now coded as: C14-H01A

C12-G06 **Thyroid agent**
1965-1993
Now coded as: C14-N11

C12-G07 **Tumour inhibitor**
1965-1993
Now coded as: C14-H01, C14-H01B

C12-H **BLOOD ACTIVE TYPE**

C12-H01 **Antianemic**
1965-1993
Now coded as: C14-F03

C12-H02 **Anticoagulant**
1965-1993
Now coded as: C14-F04

C12-H03 **Antilipemic**
1965-1993
Now coded as: C14-F06, C14-F07

C12-H04 **Coagulant**
1965-1993
Now coded as: C14-F08

C12-H05 **Hypoglycemic**
1965-1993
Now coded as: C14-F09, C14-F10

C12-H06 **Plasma and blood substitutes**
1965-1993
Now coded as: C14-F11

C12-J **GASTROINTESTINAL ACTIVE TYPE**

C12-J01 **Anabolic agent, nutritional, achlorhydria treatment (humans)**
1965-1993
Now coded as: C14-E10+, C14-E11

C12-J02 **Anorectic, antisecretory**
1965-1993
Now coded as: C14-E07, C14-E12

C12-J03 **Antacid**
1965-1993
Now coded as: C14-E01, C14-E03

C12-J04 **Antidiarrheal, antihemorrhoidal**
1965-1993
Now coded as: C14-E02, C14-E04

C12-J05 **Antidote general**
1965-1993
Now coded as: C14-M01, C14-M01C

C12-J05A **. Alcoholism treatment**
1986-1993
Now coded as: C14-M01A

C12-J05B **. Antismoking**
1986-1993
Now coded as: C14-M01B

C12-J05C **. Anti-heavy metal poisoning**
1986-1993
Now coded as: C14-M01D

C12-J05D **. Pesticide or herbicide antidote**
1986-1993
Now coded as: C14-M01E

C12-J05E **. Protecting plants from poisons**
1986-1993
Now coded as: C14-M01F

C12-J06 **Emetic**
1965-1993
Now coded as: C14-E06

C12-J07 **Laxative**
1965-1993
Now coded as: C14-E09

C12-J08 **Bone disorder treatment, osteoporosis**
Excluding arthritis treatment (C12-D03) and bone marrow cell disorders (C12-G05). For osteoporosis prior to 198601 search C12-J01.
1986-1993
Now coded as: C14-N01

C12-K **DIAGNOSTICS RESPIRATORY ACTIVE TYPE (PRE-1994)**

C12-K01 **Antitussive**
1965-1993
Now coded as: C14-K01B

C12-K02 **Bronchodilator**
1965-1993
Now coded as: C14-K01D

C12-K03 **Contraceptive**
1965-1993
Now coded as: C14-P01+

C12-K04 **Diagnosis and testing general**
This section is used for coding substances which are stated to be detecting agents: e.g. a new antibody used for detecting cancer is coded under C04-G and C12-K04G2A only. When the procedure for detecting is descibed as novel, then the corresponding C11-C07 and C11-C08 codes are also applied.
As of 201601, subsection C12-K04A has been retired and the codes reorganised and expanded in new subsection C12-K04G.

C12-K04A **. Diagnosis of diseases or conditions in animals general**
Including detection of glucose in blood and ethanol in breath.
1986-2015
Now coded as C12-K04G

C12-K04A1 **.. Diagnosis of tumours, cancer**
1986-2015
Now coded as C12-K04G2A

C12-K04A2 **.. Diagnosis of heart and circulatory disorders**
1986-2015
Now coded as C12-K04G2B

C12-K04A3 **.. Diagnosis of genetic disorders**
1986-2015
Now coded as C12-K04G2C

C12-K04A4 **.. Diagnosis of microbial infections**
1986-2015
Now coded as C12-K04G1A

C12-K04A4A **... Detection of viral diseases**
2005-2015
Now coded as C12-K04G1B

C12-K04A4B **... Detection of bacterial diseases**
2005-2015
Now coded as C12-K04G1C

C12-K04A4C **... Detection of fungal diseases**
2015-2015
Now coded as C12-K04G1D

C12-K04A5 **.. Diagnosis of CNS disorders**
1986-2015
Now coded as C12-K04G2D

C12-K04A6 **.. Diagnosis of pregnancy, testing or measuring sex hormone levels and estrus cycle**
1986-2015
Now coded as C12-K04G2E

C12-K04A7 **.. Detection of parasites**
Including protozoa and helminths.
2006-2015
Now coded as C12-K04G1E

C12-K04A8 **.. Diagnosis of immunological disorders**
2007-2015
Now coded as C12-K04G2F

C12-K04A9 **.. Diagnosis of respiratory disorders**
Includes detection of diseases such as anoxia, cystic fibrosis and bronchitis.
2012-2015
Now coded as C12-K04G2G

C12-K04A10 **.. Diagnosis or detection of endocrine and hormonal diseases**
Including thyroid diseases.
2015-2015
Now coded as C12-K04G2H

C12-K04B **. In vivo radiopharmaceutical diagnostics**
Excludes in-vivo X-ray and MRI diagnostics which are coded in C12-K07 and other types of in-vivo imaging which are coded in C12-K04C.
1986

C12-K04C **. In vivo imaging (other than by X-ray or radiopharmaceuticals)**
Includes imaging of complete organs, cells e.g. cancer cells, or other biological molecules within a whole body rather than a sample.
1986

C12-K04C1 **.. Ultrasonics**
1994
Previous code(s): C12-K04C

C12-K04C2 **.. NMR**
1994
Previous code(s): C12-K04C

C12-K04C3 **.. Tomography**
Includes PET (positron emission tomography).
2007

C12-K04D **. Testing for plant disorders or diseases**
1986

C12-K04E **. Testing for substances other than for diseases**
Not in body fluids.
1986

C12-K04E1 **.. Drug discovery process**
2005

C12-K04E2 **.. Environmental testing**
Includes testing for contaminants in rivers.
2005

C12-K04E3 **.. Other drug testing**
includes quality control
2007

C12-K04F **. Tests involving nucleic acid, hybridisation probes etc.**
1994
Previous code(s): C12-K04,C12-K04A

C12-K04G **. Diagnosis of diseases or conditions in animals general**
Including detection of glucose in blood and ethanol in breath.
2016
Previous code(s): C12-K04A

C12-K04G1 **.. Diagnosis of infections and exogenous disorders**
2016

C12-K04G1A **... Diagnosis of microbial diseases general and other**
2016
Previous code(s): C12-K04A4

C12-K04G1B **... Detection of viral diseases**
2016
Previous code(s): C12-K04A4A

C12-K04G1C **... Detection of bacterial diseases**
2016
Previous code(s): C12-K04A4B

C12-K04G1D **... Detection of fungal diseases**
2016
Previous code(s): C12-K04A4C

C12-K04G1E **... Detection of parasites**
Including protozoa and helminths.
2016
Previous code(s): C12-K04A7

C12-K04G2 **.. Diagnosis of endogenous disorders general and other**
2016

C12-K04G2A **... Diagnosis of tumors, cancer**
2016
Previous code(s): C12-K04A1

C12-K04G2B **... Diagnosis of heart and circulatory disorders**
2016
Previous code(s): C12-K04A2

C12-K04G2C **... Diagnosis of genetic disorders**
2016
Previous code(s): C12-K04A3

C12-K04G2D **... Diagnosis of CNS disorders**
2016
Previous code(s): C12-K04A5

C12-K04G2E **... Diagnosis of pregnancy, testing or measuring sex hormone levels and estrus cycle**
2016
Previous code(s): C12-K04A6

C12-K04G2F **... Diagnosis of immunological disorders**
2016
Previous code(s): C12-K04A8

C12-K04G2G **... Diagnosis of respiratory disorders**
Includes detection of diseases such as anoxia, cystic fibrosis and bronchitis.
2016
Previous code(s): C12-K04A9

C12-K04G2H **... Diagnosis of endocrine and hormonal diseases**
Including thyroid diseases.
2016
Previous code(s): C12-K04A10

C12-K04G2I **... Diagnosis of gastrointestinal disorders**
2016

C12-K04G2J **... Diagnosis of renal and urological disorders**
2016

C12-K04G2K **... Diagnosis of metabolic disorders**
2021

C12-K05 **Expectorant**
1965-1993
Now coded as: C14-K01E

C12-K06 **Respiratory active**
1965-1993
Now coded as: C14-K01,C14-K01C

C12-K07 **Contrast agents and medium**
Prior to 2010, this code covered X-ray contrast media only. Includes X-ray and MRI agents and media. Does not include radiopharmaceuticals (coded in C12-K04B) and other in-vivo imaging (coded in C12-K04C).
1963

C12-L **COSMETIC PREPARATION TYPE**

C12-L01 **Antiperspirant**
1965-1993
Now coded as: C14-R03

C12-L02 **Cosmetic**
1965-1993
Now coded as: C14-R01

C12-L03 **Dental agent**
1965-1993
Now coded as: C14-N06

C12-L04 **Ear, nose, eye mouth and throat preparation**
1965-1993
Now coded as: C14-N02, C14-N03, C14-N04, C14-N05

C12-L05 **Hair preparation**
1965-1993
Now coded as: C14-R02

C12-L06 **Insect repellent**
1965-1993
Now coded as: C14-B05

C12-L07 **Perfume**
1965-1993
Now coded as: C14-R04

C12-L08 **Sunscreen agent**
1965-1993
Now coded as: C14-R05

C12-L09 **Veterinary**
1965-1993

C12-L10 **Agricultural composition general**
1966-1993

C12-M **FORMULATIONS TYPE**
Codes in this section are applied only when the formulation is the main feature of the invention, or ingredients are not specified.

C12-M01 **Aerosol, inhalent, smoke general**

C12-M01A **. Aerosol**
1986

C12-M01B **. Inhalent**
1986

C12-M01B1 **.. Dry powder inhaler**
A dry powder inhaler (DPI) is similar to a metered dose inhaler, but is breath-activated, so the patient does not have to co-ordinate activation of the inhaler with inhalation of medicament.
2005

C12-M01B2 .. **Multidose inhaler**
A different type of inhaler that is also breath-activated. Used to deliver many smaller doses to make up the full required dosage.
2005

C12-M01B3 .. **Nebuliser**
A device which is used to administer a solution of drug in the form of a fine mist for patient to inhale. Air is forced through the drug solution in the drug chamber, changing the liquid into a fine mist which is breathed in through a mask or mouthpiece.
2005

C12-M01B4 .. **Metered dose inhaler**
2008

C12-M01C . **Smoke**
Also includes incense.
1986

C12-M01D . **Intranasal**
2002-2006
Now coded as: C12-M12Q

C12-M01E . **Other gaseous forms**
2005

C12-M02 **Cream, gel, ointment, plaster**

C12-M02A . **Toothpaste, toothpowder**
From 198601 C12-L03 is not additionally applied.
1986

C12-M02B . **Ointment, cream, lotion**
Includes liniment, paste, balm and other general oil-based formulations.
1986

C12-M02C . **Cataplasm, poultice**
Applying heat.
1986

C12-M02D . **Adhesive sheet, sticking plaster, bandage, gauze**
From 2006, the scope of this code has been extended to cover adhesive sheets in addition to sticking plasters and bandages. Also includes gauze. Excluding C12-M02C.
1986

C12-M02E . **Dusting powder**
Topical use only.
1986

C12-M02F . **Transdermal**
Administration of a drug through dermal or mucosal membrane. Includes microneedles.
1986

C12-M02G . **Gels/hydrogels**
2006

C12-M03 **Emulsion**

C12-M04 **Packaging material, apparatus**
This code is used in conjunction with only the C, C01, C07, C08 and C09 sub-sections of C11.

C12-M05 **Pharmaceutical composition general**

C12-M06 **Preservative**

C12-M07 **Solution**

C12-M08 **Suppository**
Also includes pessaries.

C12-M09 **Surfactant**

C12-M10 **Controlled release general**

C12-M10A . **Sustained release general**
Active ingredient is gradually released over a period of time.
1986

C12-M10A1 .. **Osmotic pump**
Similar to a reservoir device but with an osmotic agent added (typically the active agent in salt form) which causes pressure generation that forces out the active agent.
2005

C12-M10A2 .. **Reservoir devices**
Active drug core encapsulated within a polymer film or coat through which it diffuses.
2005

C12-M10A3 .. **Multi-layer tablet**
Variation on the matrix device in which the matrix is coated so as to modify the hydration/swelling of the core and so reduce the surface area available for drug delivery.
2005

C12-M10A4 .. **Other matrix devices**
Drug is present as a dispersion within a polymer matrix, including clathrates. Also known as monolithic devices. Not used for the multi-layer tablet type (in which matrix is fully or partially coated) or for externally stimulated devices.
2005

C12-M10A5 .. **Pendant devices**
Active is bound to polymer, from which it is released by hydrolytic enzymes in the body.
2005

C12-M10A6 .. **Dual release devices**
Typically soft gelatin capsules designed to provide an initial burst of drug followed by a steady release of the remainder. Consists of an inner aqueous matrix and outer lipophilic matrix.
2005

C12-M10A7 .. **Nanotechnology devices**
Use of nanotechnology to deliver drugs to specific sites and control their release at that point. Includes quantum dots.
2005

C12-M10B . **Delayed release**
This term is usually associated with enterically coated tablets which prevent the contents from being released until a drug reaches the intestines.
1986

C12-M10C . **Rapid release**
2002

C12-M10D . **Pulsed release**
Active drug core coated with specific polymers and agents, where active agent is released in a "drug pulse" after a time lag.
2005

C12-M10E . **Site-specific release**
Drug bound to/encased in a bio-polymer or other active substance in order to facilitate its transfer through the cell wall. This ensures the drug is delivered to the specific cells it needs to reach.
2005

C12-M10E1 .. **Using lipid-based systems**
A site specific release form in which the drug is encased in a lipid based system. These may include liposomes, solid lipid nanoparticles (SLNs), nanostructured lipid carriers (NLC) and hybrid nanoparticles.
2005

C12-M10E2 .. **Using antibodies**
A site-specific release form in which the drug is bound to an antibody.
2005

C12-M10E3 .. **Using nucleic acids**
A site-specific release form in which the drug is bound to nucleic acid.
2017

C12-M10E4 .. **Using protein/peptide**
A site-specific release form in which the drug is bound to a protein/peptide.
2019

C12-M10F . **Externally stimulated devices (e.g. electrically or ultrasonically)**
Any controlled release device in which the release of the drug is by an external stimulus. May be used in conjunction with other C12-M10 codes.
2005

C12-M11 **Tablets, capsules, pills etc. general**

C12-M11A . **Anticaking**
1986

C12-M11B . **Tablet (pressed)**
1986

C12-M11C . **Capsule**
Excluding microcapsule.
1986

C12-M11D . **Pellet, prill, granule, particle**
Excluding C12-M11B.
1986

C12-M11E . **Microcapsule**
Excluding C12-M11F.
1986

C12-M11F . **Liposomes/niosomes**
Includes non-ionic surfactant-based liposomes (when site specific release is not mentioned). Includes micelles.
1986

C12-M11G . **Powder**
1986

C12-M11H . **Polymorphic form**
2010

C12-M11H1 .. **Special amorphous form**
2006

C12-M11H2 .. **Special crystal form**
2010

C12-M11J . **Effervescent formulation**
Includes effervescent tablets and effervescent granules.
1994

C12-M11K . **Tablet with two or more coating layers**
1994
Previous code(s): C12-M11B

C12-M11L . **Water-soluble formulation**
Includes water-soluble tablets and water-soluble granules.
2002

C12-M11M . **Chewable tablet**
2005

C12-M11N . **Microparticle**
2006

C12-M11P . **Lyophilized form**
Also includes freeze dried forms.
2006

C12-M11Q . **Nanoformulations**
2008

C12-M11Q1 .. **Nanoparticle**
2020

C12-M11Q2 .. **Nanoemulsion**
2020

C12-M11Q3 .. **Nanosuspension**
2020

C12-M11R . **Coated form general and other**
Tablets with two or more coating layers are coded under C12-M11K.
2009

C12-M11R1 .. **Coated capsules**
2009

C12-M11R2 .. **Coated microparticles**
2009

C12-M11R3 .. **Coated tablets**
2012

C12-M11S . **Foam formulation**
2011

C12-M11T . **Lozenge**
2014

C12-M11U . **Dual dosage forms**
E.g. tablet in capsule / pellet in capsule. To be searched alongside the C12 codes for each individual dosage component.
2016

C12-M11V . **Colloidal form**
May be searched with other code(s) from C12-M.
2016

C12-M11Z . **Pro-formulation**
Additional code to indicate the pro-form of a formulation, e.g. pro-liposomes. Applied in conjunction with other C12-M11 codes.
2015

C12-M12 MODE OF ADMINISTRATION
2005

C12-M12A . **Buccal, sublingual**
2005

C12-M12B . **External, topical**
2005

C12-M12C . **Injection**
2005

C12-M12D . **Infusion**
2005

C12-M12E . **Intraarterial**
2005

C12-M12F . **Intravenous**
2005

C12-M12G . **Intraaural**
2005

C12-M12H . **Intraocular**
Includes intravitreal.
2005

C12-M12I . **Intratracheal**
2020

C12-M12J . **Intramuscular**
2005

C12-M12K . **Subcutaneous**
2005

C12-M12L . **Intrauterine, cervical**
2005

C12-M12M . **Intravaginal**
2005

C12-M12N . **Oral general**
2005

C12-M12O . **Intraosseous**
Administration directly into bone.
2020

C12-M12P . **Rectal general**
2005

C12-M12Q . **Intranasal**
2006

C12-M12R . **Intrathecal**
2012

C12-M12S . **Intraarticular**
2013

C12-M12T . **Intramedular**
Intramedular/intramedullary.
2013

C12-M12U . **Intraperitoneal**
2013

C12-M12V . **Epidural**
Mode of administration is through the spinal cord.
2015

C12-M12W . **Intravesical**
Injecting drugs directly to urinary bladder.
2017

C12-M12X . **Intratumoral**
2019

C12-M12Y . **Intracardiac**
Administration directly into the heart.
2020

C12-M12Z . **Specific treatment regime**
Includes sequential administration of drugs, tapered dosing regimes.
2011

C12-M13 **Foliar application**
2005

C12-M14 **Suspensions, dispersions**
2005

C12-M15 **Film, sheet**
Includes laminates.
2005

C12-M16 **Prosthesis**
2005

C12-M17 **Surgical sponge, tampon**
2005

C12-M18 **Encapsulation**
2005

C12-M19 **Gene delivery methods**
2006

C12-M19A . **Gene delivery by viral methods**
2006

C12-M19B . **Gene delivery by non-viral methods**
2006

C12-M20 **Taste masking agent**
2007

C12-M21 **Absorbent, accelerator**
2007

C12-M22 **Formulations to prevent drugs from being abused**
2008

C12-N **PESTICIDES, FERTILIZERS**

C12-N01 **Pesticides general**
1965-1993

C12-N02 **Insecticides**
1965-1993

C12-N03 **Lures, baits etc**
1965-1993

C12-N04 **Molluscicide, slugicide**
1965-1993

C12-N05 **Rodenticide**
Including birds etc.
1965-1993

C12-N06 **Rodent repellent**
Including birds etc.
1965-1993

C12-N07 **Soil fumigants, sterilants and seed protectants**
1965-1993

C12-N08 **Soil improving (other than nutrients), synthetic growth media**
1965-1993

C12-N09 **Soil nutrients**
Inorganic, including trace elements.
1965-1993

C12-N10 **Soil nutrients (others)**
1965-1993

C12-P **PLANT GROWTH REGULANT TYPE**

C12-P01 **Plant growth regulants general**
1965-1993

C12-P02 **Defoliants, desiccants, chemical mowing**
1965-1993

C12-P03 **Fruit drop and set, thinning of fruit**
1965-1993

C12-P04 **Growth stimulants, phytohormones**
1965-1993

C12-P05 **Herbicide (total and general)**
1965-1993

C12-P06 **Herbicide (selective)**
1965-1993

C12-P07 **Moss, lichen controlling**
1965-1993

C12-P08 **Rooting cpds. (rhizogenes)**
1965-1993

C12-P09 **Sprouting inhibitors, seed germination inhibitors, growth inhibitors**
1965-1993

C12-P10 **Moisture conservation (mulches)**
1965-1993

C12-Q01 **TARGETED THERAPIES**
Includes pharmacogenomics, precision medicine, personalised medicine and theranostics.
2006

C12-Q01A . **Pharmacogenomics general**
2006

C12-R **FORMULATION SPECIFICALLY EXCLUDING ONE OR MORE COMPONENTS**
e.g. herbicide formulation specifically excluding glyphosate. The component(s) excluded is/are not coded in sections C01-C10.
2009

C14 AGRICULTURAL ACTIVITIES

When a patent refers to a drug's mode of action and lists a number of activities associated with it, only the mode of action is coded.

When a patent refers to a class of diseases and then specifies only one preferred condition, both the general and specific disease codes should be applied.

C14-A **ANTIMICROBIALS**
1994

C14-A01 **Antibacterial general**
1994
Previous code(s): C12-A01

C14-A01A **. Gram-negative genera, general andother**
1994
Previous code(s): C12-A01

C14-A01A1 **.. Bordetella**
e.g. B. pertussis.
1994
Previous code(s): C12-A01

C14-A01A2 **.. Borrelia**
e.g. B. burgdorferi (causes Lyme disease)
1994
Previous code(s): C12-A01

C14-A01A3 **.. Escherichia**
e.g. E. coli.
1994
Previous code(s): C12-A01

C14-A01A4 **.. Mycoplasma**
e.g. M. pneumoniae, M. mycoides.
1994
Previous code(s): C12-A01

C14-A01A5 **.. Neisseria**
e.g. N. gonorrhoeae, N. meningitidis.
1994
Previous code(s): C12-A05

C14-A01A6 **.. Pseudomonas**
e.g. P. aeruginosa, P. mallei.
1994
Previous code(s): C12-A01

C14-A01A7 **.. Rickettsia**
e.g. R. prowazekii (causes typhus).
1994
Previous code(s): C12-A01

C14-A01A8 **.. Salmonella**
e.g. S. typhi (causes typhoid fever).
1994
Previous code(s): C12-A01

C14-A01A9 .. **Vibrio**
e.g. V. cholerae, V. parahemoliticus.
1994
Previous code(s): C12-A01

C14-A01B . **Gram-positive genera, general and other**
1994
Previous code(s): C12-A01

C14-A01B1 .. **Mycobacteria**
e.g. M.bovis, M. phlei.
1994
Previous code(s): C12-A01, C12-A03, C12-A04

C14-A01B1A ... **M. tuberculosis**
2005

C14-A01B1B ... **M. leprae**
2005

C14-A01B2 .. **Streptococcus**
e.g. S. pyogenes, S. faecalis, S. pneumoniae (pneumococci), S. lactis.
1994
Previous code(s): C12-A01

C14-A01B3 .. **Streptomyces**
e.g. S. griseus, S. scabies.
1994
Previous code(s): C12-A01

C14-A01B4 .. **Staphylococcus**
e.g. S. aureus, S. epidermitidis.
1994
Previous code(s): C12-A01

C14-A01B5 .. **Bacillus**
e.g. B.anthracis, B. cereus.
2006

C14-A01C . **Plant antibacterial general**
1994
Previous code(s): C12-A06

C14-A01C1 .. **Enterobacteria (plant)**
e.g. Erwinia. Including soft rot, fibre blight treatment.
1994
Previous code(s): C12-A01

C14-A01C2 .. **Pseudomonas (plant)**
Including plant spot, canker, gummosis treatment.
1994
Previous code(s): C12-A01

C14-A01C3 .. **Agrobacteria**
Including crown gall treatment.
1994
Previous code(s): C12-A01

C14-A01X . **Combating resistant bacteria**
This code is applied in conjunction with one or more codes from section C14-A01.
2013

C14-A02 **Antiviral general**
1994
Previous code(s): C12-A06

C14-A02A . **DNA Viruses general and other**
1994
Previous code(s): C12-A06

C14-A02A1 .. **Adenovirus**
1994
Previous code(s): C12-A06

C14-A02A2 .. **Arbovirus**
This code is used for treatment of e.g. yellow fever or viral encephalitis.
1994
Previous code(s): C12-A06

C14-A02A3 .. **Herpesvirus**
e.g. cytomegalovirus, Epstein-Barr, chicken pox.
1994
Previous code(s): C12-A06

C14-A02A4 .. **Poxvirus**
Including monkeypox.
1994
Previous code(s): C12-A06

C14-A02A5 .. **Hepatitis B virus**
1994
Previous code(s): C12-A06, C12-G02

C14-A02A6 .. **Papovavirus**
e.g. papilloma.
1994
Previous code(s): C12-A06

C14-A02A7 .. **Hepatitis C treatment**
Now coded as C14-A02B9.
2002-2014

C14-A02A8 .. **Hepatitis D treatment**
2002

C14-A02A9 .. **Parvovirus**
Includes treatment of “slapped cheek” syndrome.
2005

C14-A02B . **RNA Viruses general and other**
Includes Filoviridae e.g. Ebola virus and Marburg virus.
1994
Previous code(s): C12-A06

C14-A02B0 .. **Calcivirus**
e.g. norovirus, lagovirus, sapovirus, feline calcivirus.
2014

C14-A02B1 .. **Retrovirus**
Including leuco- and oncoviruses, T-cell leukemia virus, HIV, Rous sarcoma. Treatment of AIDS directed against symptoms or immune system is coded C14-G01B.
1994
Previous code(s): C12-A06, C12-G05, C12-G07

C14-A02B2 .. **(Para/ortho)Myxovirus**
Including Influenza and mumps. When treatment of influenza is directed against symptoms, other codes may be applied, e.g. antipyretic drug for treating flu is coded C14-C04.
1994
Previous code(s): C12-A06

C14-A02B3 .. **Picornavirus**
Including entero-, rhino-, polio-, cold, hepatitis A. For hepatitis B see C14-A02A5. When treatment of cold is directed against symptoms, other codes may be applied, e.g. antiinflammatory drug for treating cold is coded C14-C03.
1994
Previous code(s): C12-A06,C12-G02

C14-A02B4 .. **Rhabdovirus**
Including rabies.
1994
Previous code(s): C12-A06

C14-A02B5 .. **Coronavirus**
Including SARS, also coded as C14-K01D.
1994
Previous code(s): C12-A06

C14-A02B6 .. **Togavirus**
Including rubella.
1994
Previous code(s): C12-A06

C14-A02B7 .. **Reovirus**
e.g. rotavirus.
1994
Previous code(s): C12-A06

C14-A02B8 .. **Plant antiviral general**
This code covers treatment of plant viral diseases e.g. mosaic, yellow disease.
1994
Previous code(s): C12-A06

C14-A02B9 .. **Flavivirus**
Includes Yellow Fever virus, Japanese encephalitis virus, Dengue virus, Hepatitis C and G virus and West Nile virus. Prior to 201501, Hepatitis C virus was coded C14-A02A7.
2005

C14-A02X . **Combating resistant viruses**
This code is applied in conjunction with one or more codes from section C14-A02.
2013

C14-A03 **Antiprotozoal general and other**
1994
Previous code(s): C12-B04

C14-A03A . **Amoebicide**
1994
Previous code(s): C12-B01

C14-A03B . **Antimalarial**
Plasmodium is the malarial parasite.
1994
Previous code(s): C12-B03

C14-A03C . **Coccidiostat**
Includes Eimeria and Isospora.
1994
Previous code(s): C12-B05

C14-A03D . **Trichomonicide, histomonicide**
1994
Previous code(s): C12-B04

C14-A03E . **Trypanocide**
i.e. sleeping sickness.
1994
Previous code(s): C12-B07

C14-A03F . **Other antiprotozoal**
2005

C14-A03X . **Combating resistant protozoa**
This code is applied in conjunction with one or more codes from section C14-A03.
2014

C14-A04 **Antifungal general and other**
1994

C14-A04A . **Aspergillus**
1994
Previous code(s): C12-A02C

C14-A04B . **Candida**
This code covers treatment of thrush.
1994
Previous code(s): C12-A02C

C14-A04C . **Trichophyton, Microsporum**
This code covers treatment of e.g. ringworm, tinea, athlete's foot.
1994
Previous code(s): C12-A02C

C14-A04X . **Combating resistant fungi**
This code is applied in conjunction with one or more codes from section C14-A04.
2013

C14-A05 **Antialgal**
1994
Previous code(s): C12-A02A

C14-A06 **Plant antifungal general**
1994
Previous code(s): C12-A02C

C14-A06A . **Alternaria**
1994
Previous code(s): C12-A02C

C14-A06B . **Botrytis**
1994
Previous code(s): C12-A02C

C14-A06C . **Fusarium**
1994
Previous code(s): C12-A02C

C14-A06D . **Helminthosporium**
1994
Previous code(s): C12-A02C

C14-A06E . **Phytophthora**
1994
Previous code(s): C12-A02C

C14-A06F . **Pythium**
1994
Previous code(s): C12-A02C

C14-A06G . **Rhizoctonia**
1994
Previous code(s): C12-AO2C

C14-A06H . **Sclerotinia**
1994
Previous code(s): C12-A02C

C14-A06J . **Sclerotium**
1994
Previous code(s): C12-A02C

C14-A06K . **Septoria**
1994
Previous code(s): C12-A02C

C14-A06L . **Venturia**
1994
Previous code(s): C12-A02C

C14-A06M . **Verticillium**
1994
Previous code(s): C12-A02C

C14-A06N . **Powdery mildew**
e.g. Erysiphe, Sphaerotheca, Podosphaera, Uncinula.
1994
Previous code(s): C12-A02C

C14-A06P . **Downey mildew**
e.g. Plasmopara, Peronospora.
1994
Previous code(s): C12-A02C

C14-A06R . **Rusts**
1994
Previous code(s): C12-A02C

C14-A06S . **Smuts, bunts**
e.g. Ustilago, Tilletia.
1994
Previous code(s): C12-A02C

C14-A06T . **Other plant antifungals**
1994
Previous code(s): C12-A02C

C14-A06X . **Combating resistant plant fungi**
This code is applied in conjunction with one or more codes from section C14-A06.
2013

C14-B **PESTICIDES AND OTHER ANTIPARASITICS**
1994

C14-B01 **Pesticide general**
This code is applied only when type is unspecified or general.
1994
Previous code(s): C12-N01

C14-B02 **Antiparasitic general**
This code is applied only when type is unspecified or general.
1994
Previous code(s): C12-B04

C14-B02X . **Combating resistant parasites**
2020

C14-B03 **Vermicide, antihelmintic general and other**
1994
Previous code(s): C12-B02

C14-B03A . **Nematocide**
Including threadworm.
1994
Previous code(s): C12-B02

C14-B03B . **Schistosomicide**
1994
Previous code(s): C12-B06

C14-B03C . **Tapeworm**
1994
Previous code(s): C12-B02

C14-B03D . **Distomicide, other fluke**
2005

C14-B03X **. Combating resistant worms and helminths general**
This code is applied in conjunction with one or more codes from section C14-B03.
2018

C14-B04 **Arthropodicide general and other**
Includes crustacicide, arachnicide.
1994
Previous code(s): C12-N01

C14-B04A **. Acaricide**
Includes miticides, tickicides.
1994
Previous code(s): C12-B04

C14-B04B **. Insecticide general and other**
1994
Previous code(s): C12-N02

C14-B04B1 **.. Coleoptera**
Covers beetle killing.
1994
Previous code(s): C12-N02

C14-B04B2 **.. Dictyoptera**
Covers cockroach killing and termite killing.
1994
Previous code(s): C12-N02

C14-B04B3 **.. Diptera**
Includes house fly, gnat, and mosquito killing.
1994
Previous code(s): C12-N02

C14-B04B4 **.. Ephemeroptera**
Includes mayfly killing.
1994
Previous code(s): C12-N02

C14-B04B5 **.. Hemiptera**
Includes aphid (greenfly) killing.
1994
Previous code(s): C12-N02

C14-B04B6 **.. Hymenoptera**
Includes bee, wasp and ant killing.
1994
Previous code(s): C12-N02

C14-B04B7 **.. Lepidoptera**
Covers butterfly and moth killing.
1994
Previous code(s): C12-N02

C14-B04B8 **.. Orthoptera**
Covers locust killing.
1994
Previous code(s): C12-N02

C14-B04B9 **.. Siphonaptera**
Includes flea killing.
1994
Previous code(s): C12-N02

C14-B04X **. Combating resistant arthropods**
This code is applied in conjunction with one or more codes from section C14-B04.
2013

C14-B05 **Arthropod repellent**
Covers insects, crustaceans, arachnids, millipedes, ticks and mites.
1994
Previous code(s): C12-L06

C14-B06 **Arthropod attractant (pheromone)**
Covers insects, crustaceans, arachnids, millipedes, ticks and mites.
1994
Previous code(s): C12-N03

C14-B07 **Arthropod sterilant**
Covers insects, crustaceans, arachnids, millipedes, ticks and mites.
1994
Previous code(s): C12-K03

C14-B08 **Antilichen**
1994
Previous code(s): C12-A02B

C14-B09 **Rodenticide**
1994
Previous code(s): C12-N05

C14-B10 **Avicide**
1994
Previous code(s): C12-N05

C14-B11 **Piscicide**
1994
Previous code(s): C12-N05

C14-B12 **Molluscicide**
Includes gastropodicide, slug, snail, bivalve, octopus killing.
1994
Previous code(s): C12-N04

C14-B13 **Animal repellent (other than insect)**
1994
Previous code(s): C12-N06

C14-B14 **Lures, baits (other than insect pheromones)**
1994
Previous code(s): C12-N03

C14-B15 **Antifouling**
1994
Previous code(s): C12-A08

C14-C **ANESTHETICS AND DRUGS RELIEVING FEVER, INFLAMMATION AND PAIN**
1994

C14-C01 **Analgesic**
This code is used when the action of the analgesic is very wide or unspecified. A more specific code is applied where possible e.g. analgesic for treating dysmenorrhea only is coded under C14-N14 only.
1994
Previous code(s): C12-D01

C14-C02 **Antigout**
1994
Previous code(s): C12-D07, C12-G03

C14-C03 **Antiinflammatory general**
This code is used for treatment of general edema or inflammation. Specific inflammation treatments are coded elsewhere when possible e.g. Bronchitis is coded C14-K01 only, colitis as C14-E01C only etc.
1994
Previous code(s): C12-D07

C14-C04 **Antipyretic**
1994
Previous code(s): C12-D08

C14-C05 **Antihypothermia**
1994
Previous code(s): C12-D08

C14-C06 **Antirheumatic**
1994
Previous code(s): C12-D09

C14-C07 **General anesthetic**
1994
Previous code(s): C12-C01

C14-C08 **Local anesthetic**
1994
Previous code(s): C12-C02

C14-C09 **Antiarthritic general and other**
1994
Previous code(s): C12-D03

C14-C09A **. Osteoarthritis**
1994
Previous code(s): C12-D03

C14-C09B **. Rheumatoid arthritis**
1994
Previous code(s): C12-D03

C14-D **HORMONAL, ANTIHORMONAL, ENZYME INHIBITORS**
Codes marked * are also used for agonist/mimetic or receptor agonist/mimetic activities. Codes marked ** are also used for antagonist/inhibitor or receptor antagonist/inhibitor activities e.g. aldosterone receptor antagonist is coded C14-D02A1. See section C14-L for other agonist/antagonist activities.
1994

C14-D01 **Hormonal general and other***
1994
Previous code(s): C12-G04

C14-D01A **. Androgenic***
1994
Previous code(s): C12-G04B

C14-D01B **. Estrogenic***
1994
Previous code(s): C12-G04C

C14-D01C **. Progestational***
1994
Previous code(s): C12-G04D

C14-D01D **. Other steroid***
1994
Previous code(s): C12-G04

C14-D01E **. Peptide hormone activity***
1994
Previous code(s): C12-G04

C14-D01E1 **.. Melanocortin agonist**
Adrenocorticotropic hormone agonist.
2005

C14-D01E2 **.. Melanin concentrating hormone agonist**
2005

C14-D01E3 **.. Glucagon-like peptide-1 (GLP-1) agonist**
2025

C14-D02 **Antihormonal general and other****
1994
Previous code(s): C12-G01A

C14-D02A **. Antisteroid general and other****
1994
Previous code(s): C12-G01A

C14-D02A1 **.. Antialdosterone****
1994
Previous code(s): C12-G01A

C14-D02A2 **.. Anticholesterol****
1994
Previous code(s): C12-H03

C14-D02A3 .. **Antiestrogenic**
This code also covers estrogenic antagonist/inhibitor activity and estrogen receptor antagonist/inhibitor activities.
2005

C14-D02A4 .. **Antiprogestational**
This code also covers progestational antagonist/inhibitor activity and progestational receptor antagonist/inhibitor activities.
2005

C14-D02A5 .. **Antiandrogenic**
This code also covers androgenic antagonist/inhibitor activity and androgen receptor antagonist/inhibitor activities.
2005

C14-D02A6 .. **Other antisteroid hormone**
This code also covers other steroid antagonist/inhibitor activity and other steroid receptor antagonist/inhibitor activities.
2005

C14-D02B . **Antipeptide hormone****
1994
Previous code(s): C12-G01A

C14-D02B1 .. **Melanocortin antagonist**
2005

C14-D02B2 .. **Melanin concentrating hormone antagonist**
2005

C14-D03 **Enzyme inhibitors general and other**
1994
Previous code(s): C12-G01B

C14-D04 **Coenzyme inhibitors**
1994
Previous code(s): C12-G01B

C14-D05 **Antioxidoreductases general and other**
1994
Previous code(s): C12-G01B1

C14-D05A . **Antioxidases**
1994
Previous code(s): C12-G01B1

C14-D05B . **Antiperoxidases**
1994
Previous code(s): C12-G01B1

C14-D05C . **Antioxygenases**
1994
Previous code(s): C12-G01B1

C14-D05D . **Antidehydrogenases, Antireductases**
1994
Previous code(s): C12-G01B1

C14-D06 **Antitransferases general and other**
Includes HIV integrase inhibitor.
1994
Previous code(s): C12-G01B2

C14-D06A . **AntiDNA/RNA polymerase**
1994
Previous code(s): C12-G01B2

C14-D06B . **Antireverse transcriptase**
1994
Previous code(s): C12-G01B2

C14-D06C . **Antikinase**
2005

C14-D07 **Antihydrolases general and other**
1994
Previous code(s): C12-G01B3

C14-D07A . **Antiesterases**
Including lipase, nuclease, restriction enzyme, sulfatase, phosphatase inhibitors.
1994
Previous code(s): C12-G01B3

C14-D07A1 .. **Antiphosphodiesterases**
2005

C14-D07B . **Antiglycosidases**
Including amylase, cellulase, lactase inhibitors.
1994
Previous code(s): C12-G01B3

C14-D07C . **Antiproteases, antipeptide hydrolases**
Including chymotrypsin, trypsin, papain, fibrinolysin, renin, collagenase, elastase inhibitors. Renin inhibitor used as hypotensive is coded C14-F02B1 only.
1994
Previous code(s): C12-G01B3

C14-D07C1 .. **Antimetalloproteases**
2005

C14-D08 **Antilyases**
Including adenyl cyclase, (de)carboxylase, aldolase, dehydratase inhibitors.
1994
Previous code(s): C12-G01B4

C14-D09 **Antiisomerases**
Including racemase, tautomerase, epimerase, mutase inhibitors.
1994
Previous code(s): C12-G01B5

C14-D10 **Antiligases**
Including synthetase, some carboxylase inhibitors.
1994
Previous code(s): C12-G01B6

C14-E **DRUGS ACTING ON THE GASTROINTESTINAL SYSTEM**
1994

C14-E01 **Antacid**
1994
Previous code(s): C12-J03

C14-E02 **Antidiarrheal**
1994
Previous code(s): C12-J04

C14-E03 **Antiflatulent**
1994
Previous code(s): C12-J03

C14-E04 **Antihemorrhoidal**
1994
Previous code(s): C12-J04

C14-E05 **Antiemetic**
1994
Previous code(s): C12-D05

C14-E06 **Emetic**
1994
Previous code(s): C12-J06

C14-E07 **Gastric secretion inhibitor**
1994
Previous code(s): C12-J02

C14-E08 **Ulcer treatment (peptic, gastric, duodenal)**
Skin ulcers are coded C14-N17H.
1994
Previous code(s): C12-E08

C14-E09 **Laxative**
1994
Previous code(s): C12-J07

C14-E10 **Gastrointestinal dysfunction general and other**
1994
Previous code(s): C12-J01

C14-E10A **. Esophageal**
1994
Previous code(s): C12-J01

C14-E10B **. Gastric**
Includes gastritis.
1994
Previous code(s): C12-J01

C14-E10C **. Bowel**
Including irritable and inflammatory bowel (e.g. IBS).
1994
Previous code(s): C12-J01

C14-E10C1 **.. Inflammatory bowel conditions**
2005

C14-E10D **. Dysentery**
1994
Previous code(s): C12-B01, C12-A01, C12-A06, C12-J04, C12-J05

C14-E10E **. Gastrointestinal flora**
2008

C14-E11 **Anabolic, anorexia treatment general**
1994
Previous code(s): C12-J01

C14-E11A **. Anorexia**
2005

C14-E11B **. Cachexia**
Any general reduction in the vitality and/or strength of the body and/or mind as a result of a debilitating chronic illness.
2005

C14-E11C **. Malnutrition**
2005

C14-E11D **. Bulimia**
2005

C14-E12 **Anorectic, obesity treatment (appetite depressant)**
1994
Previous code(s): C12-J02

C14-F **DRUGS ACTING ON THE BLOOD AND CARDIOVASCULAR SYSTEM**
The codes marked with * are also used for agonist/mimetic or receptor agonist/mimetic activities. The codes marked with ** are also used for antagonist/inhibitor or receptor antagonist/inhibitor activities. See section C14-L for other agonist/antagonist activities.
1994

C14-F01 **Cardioactive general and other**
1994
Previous code(s): C12-F01

C14-F01A **. Antiarrhythmic**
1994
Previous code(s): C12-F01A

C14-F01B **. Cardiac stimulant**
Including treatment of myocardial infarct, myocardial contraction intensifying, cardiotonic, cardiac arrest treatment, cardiac insufficiency treatment.
1994
Previous code(s): C12-F01B

C14-F01C **. Cardiac depressant**
1994
Previous code(s): C12-F01C

C14-F01D **. Antianginal**
1994
Previous code(s): C12-F02

C14-F01E **. Coronary dilator, coronary ischemia treatment**
1994
Previous code(s): C12-F02

C14-F01F . **Ganglion blocker**
1994
Previous code(s): C12-F03

C14-F01G . **Restenosis treatment**
2002

C14-F02 **Circulatory active general and other**
1994
Previous code(s): C12-E01

C14-F02A . **Hypertensive (calcium agonists)***
1994
Previous code(s): C12-F04

C14-F02B . **Hypotensive general and other**
1994
Previous code(s): C12-F05

C14-F02B1 .. **Angiotensin converting enzyme inhibitor, angiotensin antagonists****
This code is also applied to renin inhibitor when it is used as hypotensive.
1994
Previous code(s): C12-F05A

C14-F02B2 .. **Calcium antagonists/entry blockers****
1994
Previous code(s): C12-F05B, C12-G01

C14-F02C . **Vasoconstrictor**
1994
Previous code(s): C12-F06

C14-F02D . **Vasodilator, general ischemia treatment**
1994
Previous code(s): C12-F07

C14-F02D1 .. **Cerebral ischemia treatment**
1994
Previous code(s): C12-F07, C12-C10

C14-F02D2 .. **Pulmonary ischemia treatment**
1994
Previous code(s): C12-K06

C14-F02E . **Lymphatic disease treatment**
1994
Previous code(s): C12-G03

C14-F02F . **Peripheral vascular disorder/ angiogenic general**
2002

C14-F02F1 .. **Angiogenic**
2002

C14-F02F2 .. **Anti-angiogenic**
2002

C14-F02F3 .. **Peripheral vascular disorder**
2002

C14-F03 **Antianemic**
This code covers treatment of blood cell ratio imbalance.
1994
Previous code(s): C12-H01

C14-F04 **Anticoagulant, antiaggregants, thrombolytic**
1994
Previous code(s): C12-H02

C14-F05 **Reperfusion treatment**
1994

C14-F06 **Antilipemic**
1994
Previous code(s): C12-H03

C14-F06A . **Dyslipidemia**
2005

C14-F06B . **Hypertriglyceremia**
2011

C14-F07 **Antiarteriosclerotic**
Includes atherosclerosis.
1994
Previous code(s): C12-H03

C14-F08 **Coagulant**
1994
Previous code(s): C12-H04

C14-F09 **Hypoglycaemic**
Treatment of diabetic symptoms is coded C14-S04.
1994
Previous code(s): C12-H05

C14-F10 **Hyperglycaemic**
1994
Previous code(s): C12-H05

C14-F11 **Plasma and blood substitutes**
1994
Previous code(s): C12-H06

C14-G **DRUGS ACTING ON THE IMMUNE SYSTEM**
1994

C14-G01 **Immunostimulant general and other**
1994
Previous code(s): C12-A01, C12-A06

C14-G01A . **Interferon inducing**
This code is also used for agonist/mimetic or receptor agonist/mimetic activity.
1994
Previous code(s): C12-A06

C14-G01B . **AIDS treatment**
A drug which combats HIV is coded C14-A02B1.
1994
Previous code(s): C12-A06

C14-G02 **Immunosuppressant general and other**
1994
Previous code(s): C12-D02B

C14-G02A **. Antiallergic**
1994
Previous code(s): C12-D02

C14-G02B **. Antianaphylactic**
1994
Previous code(s): C12-D02D

C14-G02C **. Graft/transplant rejection treatment**
1994
Previous code(s): C12-D02B

C14-G02D **. Autoimmune disease treatment**
1994
Previous code(s): C12-D02A

C14-G03 **Immunomodulatory**
1994
Previous code(s): C12-A01, C12-A06, C12-D02B

C14-H **CANCER RELATED DRUGS**
Codes from sections C14-H01D - H01Z are now structured within the hierarchy C14-H01D to C14-H01L below. All document records containing codes introduced in 2005 will be changed to reflect the updated 2006 hierarchy and codes C14-H01M to C14-H01Z will no longer be searchable.
1994

C14-H01 **Anticancer general and other**
1994
Previous code(s): C12-G07

C14-H01A **. Leukemia treatment**
1994
Previous code(s): C12-G05

C14-H01B **. Antiproliferative, inhibitor of cell division, cytostatic, cytoprotective**
1994
Previous code(s): C12-D07, C12-E08, C12-G07

C14-H01C **. Dermatological cancers**
2005

C14-H01D **. Endocrine cancers**
2005

C14-H01D1 **.. Breast cancers**
2005

C14-H01D2 **.. Thyroid cancers**
2005

C14-H01E **. Gastrointestinal cancers**
2005

C14-H01E1 **.. Colon cancers**
2005

C14-H01E2 **.. Esophageal cancers**
2005

C14-H01E3 **.. Gall bladder cancers**
2005

C14-H01E4 **.. Intestinal cancers**
2005

C14-H01E5 **.. Hepatic cancers**
2005

C14-H01E6 **.. Pancreatic cancers**
2005

C14-H01E7 **.. Rectal cancers**
2005

C14-H01E8 **.. Stomach cancers**
2005

C14-H01F **. Genitourinary cancers**
2005

C14-H01F1 **.. Cervical/uterine cancers**
2005

C14-H01F2 **.. Kidney cancers**
2005

C14-H01F3 **.. Ovarian cancers**
2005

C14-H01F4 **.. Prostate cancers**
2005

C14-H01F5 **.. Testicular cancers**
2005

C14-H01F6 **.. Bladder cancers**
2005

C14-H01G **. Immunological cancers**
2005

C14-H01G1 **.. Hodgkin's lymphoma**
2005

C14-H01G2 **.. Non-Hodgkin's lymphoma**
2005

C14-H01H **. Musculoskeletal cancers**
2005

C14-H01H1 **.. Osteocancers**
2005

C14-H01H2 **.. Sarcoma**
2005

C14-H01J **. Neurological cancers**
2005

C14-H01J1 **.. Brain tumours**
2005

C14-H01K **. Oral and respiratory cancers**
2005

C14-H01K1 **.. Buccal cavity and pharynx cancers**
2005

C14-H01K2 **.. Larynx cancers**
2005

C14-H01K3 .. **Lung cancers**
2005

C14-H01L . **Other cancers**
2005

C14-H01L1 .. **Multiple myelomas**
2005

C14-H02 **Mutagen, carcinogen**
1994
Previous code(s): C12-G07

C14-H03 **Apoptotic**
2002

C14-H04 **Anti-apoptotic**
2002

C14-H05 **Antiproliferative (non-cancerous)**
e.g. hyperplasia.
2006

C14-H06 **Tumor sensitizers**
Search when sensitizer type is not specified.
2008

C14-H06A . **Radiosensitizers**
Includes metalloptosis.
2016

C14-H06B . **Photosensitizers**
2016

C14-H06C . **Chemosensitizers**
2021

C14-H06D . **Sonosensitizers**
2023

C14-H07 **Hypoplasia and aplasia**
To be searched in the general case where the affected organ(s) are not specified.
2016

C14-H00X **Treatment resistant cancers**
To be applied in conjunction with other code(s) from C14-H where the cancer(s) to be treated are stated to be drug-, radiotherapy- and/or chemotherapy resistant.
2014

C14-J **DRUGS ACTING ON THE MUSCULAR AND NERVOUS SYSTEMS**
Codes marked * are also used for agonist/mimetic or receptor agonist/mimetic activities e.g. dopamine receptor agonist is coded dopaminergic C14-J02C2. Codes marked ** are also used for antagonist/inhibitor or receptor antagonist/inhibitor activities.
1994

C14-J01 **CNS active general and other**
Covers terms such as cerebroprotective and neuroprotective.
1994
Previous code(s): C12-C10

C14-J01A . **Stimulants general and other**
1994
Previous code(s): C12-C06

C14-J01A1 .. **Antidepressant**
1994
Previous code(s): C12-C06

C14-J01A2 .. **Analeptic**
1994
Previous code(s): C12-C03

C14-J01A3 .. **Antiparkinsonian**
1994
Previous code(s): C12-C04

C14-J01A4 .. **Alzheimer's, Huntington's, senility, senile dementia, cognitive enhancer, antiamnesia, nootropics**
1994
Previous code(s): C12-C10, C12-G04A

C14-J01B . **Depressants general and other**
1994
Previous code(s): C12-C05

C14-J01B1 .. **Hypnotic**
1994
Previous code(s): C12-C07

C14-J01B2 .. **Sedative**
1994
Previous code(s): C12-C08

C14-J01B3 .. **Antipsychotic, neuroleptic, antischizophrenic**
1994
Previous code(s): C12-C10, C12-E02

C14-J01B4 .. **Tranquilliser, anxiolytic**
1994
Previous code(s): C12-C10

C14-J02 **Autonomic NS active general and other**
1994
Previous code(s): C12-E01

C14-J02A . **Parasympathetic stimulants, mimetics general and other***
1994
Previous code(s): C12-E05

C14-J02A1 .. **Cholinergic (acetyl choline potentiators)***
1994
Previous code(s): C12-E05

C14-J02A2 .. **Muscarinic***
1994
Previous code(s): C12-E05

C14-J02B **. Parasympathetic depressant, parasympatholytic general and other****
1994
Previous code(s): C12-E04

C14-J02B1 **.. Anticholinergic****
1994
Previous code(s): C12-E04

C14-J02B2 **.. Antimuscarinic****
1994
Previous code(s): C12-E04

C14-J02C **. Sympathetic stimulants general and other****
1994
Previous code(s): C12-E07

C14-J02C1 **.. Adrenergic, adrenaline potentiator (alpha and beta)***
1994
Previous code(s): C12-E07

C14-J02C2 **.. Dopaminergic***
1994
Previous code(s): C12-E07

C14-J02D **. Sympathetic depressants, sympatholytic general and other****
1994
Previous code(s): C12-E06

C14-J02D1 **.. Alpha-adrenergic blocker****
1994
Previous code(s): C12-E06A

C14-J02D2 **.. Beta-adrenergic blocker****
1994
Previous code(s): C12-E06B

C14-J02D3 **.. Antidopaminergic***
1994
Previous code(s): C12-E06

C14-J03 **Serotoninergic***
1994
Previous code(s): C12-G04

C14-J04 **Antiserotoninergic****
1994
Previous code(s): C12-G01

C14-J05 **Muscular active general and other (inotropic)**
1994
Previous code(s): C12-E02

C14-J05A **. Muscle relaxant (negatively inotropic)**
1994
Previous code(s): C12-E02

C14-J05B **. Mydriatic/myopic/hyperopic**
1994
Previous code(s): C12-E03

C14-J05C **. Muscle contractant (positively inotropic)**
1994
Previous code(s): C12-E02

C14-J05D **. Antispastic, antispasmodic, spasmolytic, spasm treatment**
1994
Previous code(s): C12-E02,C12-E04

C14-J05E **. Duchenne's muscular dystrophy treatment**
2002

C14-J06 **Convulsant**
1994
Previous code(s): C12-D10

C14-J07 **Anticonvulsant**
1994
Previous code(s): C12-D04

C14-K **DRUGS ACTING ON THE RESPIRATORY SYSTEM**
1994

C14-K01 **Respiratory active general and other**
Including anoxia, cystic fibrosis and bronchitis treatment.
1994
Previous code(s): C12-K06

C14-K01A **. Antiasthmatic**
1994
Previous code(s): C12-D02, C12-K02

C14-K01B **. Antitussive**
1994
Previous code(s): C12-K01

C14-K01C **. Bronchoconstrictor**
1994
Previous code(s): C12-K06

C14-K01D **. Bronchodilator**
1994
Previous code(s): C12-K02

C14-K01E **. Decongestant, expectorant, mucolytic**
From 2006, the scope of this code has been extended to cover decongestants in addition to expectorants and mucolytics.
1994
Previous code(s): C12-K05

C14-K01F **. Adult respiratory distress syndrome (ARDS)**
2002

C14-L **AGONISTS/MIMETICS AND ANTAGONISTS/INHIBITORS NOT COVERED ELSEWHERE**
The codes in this section are also used for receptor agonists/mimetics and receptor antagonists/mimetics, e.g. histamine receptor agonist is coded C14-L05.
1994

C14-L01 **Agonist/mimetic general and other**
1994

C14-L01A . **Enzyme agonist/mimetic**
2005

C14-L01A1 .. **Oxidoreductase agonist**
2007

C14-L01A2 .. **Transferase agonist**
2007

C14-L01A3 .. **Hydrolase agonist**
2007

C14-L01A4 .. **Lyase agonist**
2007

C14-L01A5 .. **Isomerase agonist**
2007

C14-L01A6 .. **Synthetase agonist**
2007

C14-L01B . **Cannabinoid agonist**
2006

C14-L01C . **PPAR agonist**
Peroxisome proliferator-activated receptor agonist.
2006

C14-L01D . **Nitric oxide agonist**
2007

C14-L02 **Angiotensin agonist/mimetic**
N.B. Angiotensin antagonists/inhibitors are coded C14-F02B1.
1994

C14-L03 **Interleukin agonist/mimetic**
1994

C14-L04 **Prostaglandin, leukotriene, thromboxane agonist/mimetic**
1994

C14-L05 **Histaminergic, histamine agonist/mimetic**
1994

C14-L06 **Antagonist, inhibitor, antimetabolite general and other**
1994
Previous code(s): C12-G01

C14-L06B . **Cannabinoid antagonist**
2006

C14-L06C . **PPAR antagonist**
Peroxisome proliferator-activated receptor antagonist.
2006

C14-L06D . **Nitric oxide antagonist**
2007

C14-L07 **Interleukin antagonist/inhibitor**
1994
Previous code(s): C12-G01

C14-L08 **Prostaglandin, leukotriene, thromboxane antagonist/inhibitor**
1994
Previous code(s): C12-G01

C14-L09 **Histamine antagonist/inhibitor general and other**
1994
Previous code(s): C12-D06

C14-L10 **H1 antagonist/inhibitor**
1994
Previous code(s): C12-D06B

C14-L11 **H2 antagonist/inhibitor**
1994
Previous code(s): C12-D06A

C14-L12 **Proton pump inhibitors**
2006
Previous code(s): C14-L06

C14-M **ANTIDOTES**
1994
Previous code(s): C12-J05

C14-M01 **Antidote general and other**
To be searched for treating chronic and habitual conditions: treating acute intoxication is searched under C14-M03.
1994
Previous code(s): C12-J05

C14-M01A . **Alcoholism treatment**
1994-2006
Previous code(s): C12-J05A

C14-M01B . **Antismoking**
1994-2006
Previous code(s): C12-J05B

C14-M01C . **Antidrug addiction**
1994-2006
Previous code(s): C12-J05

C14-M01D . **Antiheavy metal poisoning**
1994
Previous code(s): C12-J05C

C14-M01E . **Pesticide/herbicide antidote**
Includes herbicide safeners prior to 2009.
1994
Previous code(s): C12-J05D

C14-M01F . **Protecting plants from poisons**
1994
Previous code(s): C12-J05E

C14-M02 **Agrochemical antidote general**
2006

C14-M02A . **Chemoprotectant**
2006

C14-M02B . **Radioprotectant**
2006

C14-M03 **Recreational drug antidote general and unspecified**
To be searched for treating acute intoxication, treating chronic conditions is searched under C14-M01.
2016

C14-M03A **. Sobering agent for acute alcohol intoxication**
2016

C14-M03B **. Antidote for acute recreational drug intoxication other than alcohol**
2016

C14-N **ORGANS**
1994

C14-N01 **Bone disorder treatment, osteoporosis**
1994
Previous code(s): C12-J08

C14-N01A **. Osteoporosis**
2005

C14-N01B **. Fractures, disorders of healing and osteogenesis**
2005

C14-N02 **Ear disorder treatment**
1994
Previous code(s): C12-L04

C14-N02A **. Balance related disorder and vestibular disorder**
2008

C14-N03 **Eye disorder treatment**
1994
Previous code(s): C12-L04

C14-N03A **. Glaucoma**
2005

C14-N04 **Nose disorder treatment**
1994
Previous code(s): C12-L04

C14-N05 **Mouth/throat disorder treatment**
1994
Previous code(s): C12-L04

C14-N05A **. Mouth disorder**
E.g. cold sores and xerostomia (chronic dry mouth).
2005

C14-N05B **. Throat disorder**
Covers throat disorders, but excludes disorders of the esophagus.
2005

C14-N06 **Dental general and other**
1994
Previous code(s): C12-L03

C14-N06A **. Anticaries/antiplaque**
1994
Previous code(s): C12-A01, C12-L03

C14-N06B **. Periodontal**
1994
Previous code(s): C12-L03, C12-L04

C14-N07 **Urogenital/anorectal disease treatment general and other**
1994
Previous code(s): C12-A05, C12-D07, C12-G03, C12-G04

C14-N07A **. Prostate**
1994
Previous code(s): C12-G03, C12-G04

C14-N07B **. Cystitis**
1994
Previous code(s): C12-D07

C14-N07C **. Venereal**
1994
Previous code(s): C12-A05

C14-N07D **. Incontinence treatment**
1994
Previous code(s): C12-G03

C14-N08 **Diuretic**
1994
Previous code(s): C12-G03

C14-N09 **Antidiuretic**
1994
Previous code(s): C12-G03

C14-N10 **Kidney**
1994
Previous code(s): C12-G03

C14-N11 **Thyroid**
1994
Previous code(s): C12-G06

C14-N12 **Liver**
1994
Previous code(s): C12-G02

C14-N13 **Pancreas**
1994
Previous code(s): C12-G02

C14-N14 **Uterus**
Premenstrual syndrome and dysmenorrhea are covered here but labour inducing drugs are coded with abortifacients under C14-P01B.
1994
Previous code(s): C12-E09

C14-N15 **Spleen**
1994
Previous code(s): C12-G02

C14-N16 **Brain and spinal cord**
Including meningitis, encephalitis, stroke treatment.
1994
Previous code(s): C12-C10, C12-E01

C14-N16A **. Bovine spongiform encephalopathy (BSE, "mad cow disease")**
2002

C14-N16B **. Creutzfeld Jakob disease (CJD)**
2002

C14-N16C **. Kuru**
2005

C14-N16D **. Scrapie**
A fatal degenerative disease affecting the CNS of sheep and goats.
2005

C14-N17 **Skin treatment general and other**
Fungal skin diseases are coded under C14-A04.
1994
Previous code(s): C12-A07

C14-N17A **. Burn**
1994
Previous code(s): C12-A07

C14-N17B **. Wound other (physical trauma)**
1994
Previous code(s): C12-A07

C14-N17C **. Psoriasis, dermatitis**
1994
Previous code(s): C12-A07

C14-N17D **. Acne**
1994
Previous code(s): C12-A07

C14-N17E **. Dandruff and seborrhea**
2005

C14-N17F **. Antiscarring**
2005

C14-N17G **. Pruritis**
2008

C14-N17H **. Dermal ulcers**
Also includes cold sores, which are additionally coded with C14-A02A3.
2019

C14-N18 **Mammary gland**
Including mastitis.
2002

C14-N19 **Nail disease treatment**
Fungal nail diseases also search under C14-A04.
2020

C14-P **DRUGS ACTING ON THE REPRODUCTIVE SYSTEM**
1994

C14-P01 **Contraceptive general and other**
1994
Previous code(s): C12-K03

C14-P01A **. Male, spermicide**
1994
Previous code(s): C12-K03

C14-P01B **. Female, abortifacient, antiovulatory**
1994
Previous code(s): C12-K03

C14-P02 **Infertility treatment**
1994

C14-P03 **Antiabortive**
1994
Previous code(s): C12-E09

C14-P04 **Sexual dysfunction**
Sexual dysfunction general.
2006

C14-P04A **. Male sexual dysfunction**
2006

C14-P04B **. Female sexual dysfunction**
2006

C14-P05 **Menopause/andropause and related symptoms**
To be searched for general references to menopause or andropause where precise hormones affected are not specified. Also may be searched in conjunction with other C14 codes where a condition is specifically attributed to menopause or andropause in the original document e.g. hot flashes.
2016

C14-R **COSMETICS**
1994
Previous code(s): C12-L02

C14-R01 **Cosmetic general and other**
1994
Previous code(s): C12-L02

C14-R02 **Hair preparation**
Includes formulations for fur.
1994
Previous code(s): C12-L05

C14-R03 **Antiperspirant**
1994
Previous code(s): C12-L01

C14-R04 **Perfume**
1994
Previous code(s): C12-L07

C14-R05 **Sunscreen agent**
1994
Previous code(s): C12-L08

C14-S **MISCELLANEOUS ACTIVITY TERMS**
1994

C14-S01 **Multiple sclerosis treatment, demyelinating diseases**
1994
Previous code(s): C12-E01

C14-S02 **Dwarfism treatment**
1994
Previous code(s): C12-G04

C14-S03 **Gene therapy general**
1994

C14-S03A **. Gene therapy**
2002

C14-S03B **. Antisense therapy**
2002

C14-S03C **. RNA interference**
2005

C14-S03D **. shRNA interference**
2008

C14-S04 **Diabetes**
This code is used when a drug targets the symptoms and associated disorders. Hypoglycemia is coded C14-F09.
1994
Previous code(s): C12-H05

C14-S04A **. Type II diabetes**
Also known as adult onset diabetes or non-insulin dependent diabetes.
2005

C14-S05 **Shock treatment general (excluding anaphylactic)**
Anaphylactic shock is coded C14-G02B.
1994
Previous code(s): C12-A07

C14-S06 **Toxic (septic) shock**
1994
Previous code(s): C12-A01, C12-A06

C14-S07 **Traumatic shock**
1994
Previous code(s): C12-C10

C14-S08 **Antioxidant/free radical scavenger**
1994

C14-S09 **Synergist**
1994
Previous code(s): C12-C09

C14-S11 **Vaccine general**
1994
Previous code(s): C02-V02

C14-S11A **. Antiviral vaccine**
1994
Previous code(s): C02-V02

C14-S11B **. Other antimicrobial vaccine**
E.g. antibacterial.
1994
Previous code(s): C02-V02

C14-S11B1 **.. Antibacterial vaccine**
2005

C14-S11B2 **.. Antiprotozoal vaccine**
2005

C14-S11B3 **.. Antiparasitic vaccine**
2005

C14-S11C **. Anticancer vaccine**
1994
Previous code(s): C02-V02

C14-S11D **. Vaccine type**
2005

C14-S11D1 **.. Whole-killed (inactive) vaccine**
2005

C14-S11D2 **.. Live-attenuated (weakened) vaccine**
2005

C14-S11D3 **.. Synthetic/genetically engineered vaccine**
2005

C14-S11E **. Therapeutic vaccine other**
Vaccine other than antimicrobial or anticancer e.g. immunocontraceptive or antiasthma vaccine. Unspecified vaccines should be searched under the general code C14-S11.
2015

C14-S11F **. Vaccine adjuvants general**
This code is also searched when three or more subcodes would be applied.
2023

C14-S11F1 **.. Aluminum adjuvants**
2023

C14-S11F2 **.. Freund's adjuvants**
2023

C14-S11F3 **.. Squalene based adjuvants**
2023

C14-S11F4 **.. Vitamin E/tocopherol based adjuvants**
2023

C14-S11F5 **.. Saponin based adjuvants**
2023

C14-S11F6 **.. Other adjuvants**
2023

C14-S12 **Veterinary**
1994
Previous code(s): C12-L09

C14-S13 **Metabolic disorders**
Includes enzyme deficiencies and conditions arising from such.
2005

C14-S13A **. Acidosis**
2005

C14-S14 **Joint disorders general**
Includes conditions affecting tendons and bursa.
2005

C14-S14A **. Cartilage and connective tissue disorders**
2009

C14-S14B **. Soft tissue disorders**
2009

C14-S15 **Broad formulation**
Patent is concerned with the formulation type rather than the drugs contained in it.
2005

C14-S16 **Many diseases treated**
More than 15 diseases are said to be treated. Specific codes for the individual disease are still included.
2005

C14-S17 **Agricultural activity**
2005

C14-S18 **Drug combination**
Used when specific combination of drugs are claimed.
2006

C14-S20 **Genetic disorder**
2006

C14-S20A **. Chromosomal abnormality disorder**
2006

C14-S20B **. Fabry disease**
2015

C14-S20C **. Hunter syndrome**
2015

C14-S21 **Cell therapy**
2006

C14-S21A **. Stem cell therapy**
2023

C14-S21B **. CAR T-cell therapy**
2023

C14-S22 **Prophylaxis**
Used only when a compound or formulation is solely for prophylaxis or prevention of a disorder. Applied only for veterinary patents in C.
2009

C14-S23 **Unspecified activity**
Applied to documents when a agrochemical formulation/ substance with agrochemical activity is claimed, but no specific disorders are mentioned as being treated, i.e., when no other activity codes can be applied. E.g. disorders of ying and yang.
2009

C14-S25 **Chemotherapy**
2010

C14-S26 **Radiotherapy**
2010

C14-S27 **Electromagnetic therapy**
Includes ultrasound, sonodynamic therapy and phototherapy using high energy photons. Also includes electrical stimulation.
2010

C14-S28 **Prodrugs**
Applied only when the prodrug is the novelty of the invention.
2012

C14-T **FERTILISERS/SOIL IMPROVING GENERAL**
This code is also applied when three or more of C14-T01 to C14-T05 would be applicable.
1994
Previous code(s): C12-N09,C12-N10

C14-T01 **Soil improving (other then nutrients) Synthetic growth media**
Includes bioremediation of soil.
1994
Previous code(s): C12-N08

C14-T01A **. Synthetic growth medium**
Can be used in conjunction with other C14 codes for general agricultural activity.
2005

C14-T01B **. Erosion inhibition of soil**
2005

C14-T01C **. Frost protection of soil**
2005

C14-T01D **. Nitrification inhibitor**
2005

C14-T02 **Moisture conservation (mulches)**
1994
Previous code(s): C12-P10

C14-T03 **Soil nutrients (inorganic)**
1994
Previous code(s): C12-N09

C14-T04 **Soil nutrients (others)**
1994
Previous code(s): C12-N10

C14-T05 **Trace element fertilisers**
2005

C14-U **PLANT GROWTH REGULANTS/PROCTECTANTS**
1994

C14-U01 **Plant growth regulants (general), phytohormones**
1994
Previous code(s): C12-P01

C14-U01A **. Defoliants, desiccants, chemical mowing**
1994
Previous code(s): C12-P02

C14-U01B **. Fruit drops and set, thinning of fruit**
1994
Previous code(s): C12-P03

C14-U01C **. Growth stimulants, sprouting and germination stimulants**
1994
Previous code(s): C12-P04

C14-U01D **. Rooting compounds (rhizogenes)**
1994
Previous code(s): C12-P08

C14-U01E **. Sprouting inhibitors, seed germination inhibitors, growth inhibitors**
1994
Previous code(s): C12-P09

C14-U01F **. Inducing flowering in plants**
2006

C14-U01G **. Conferring colour improvement to plants**
Includes improving chlorophyll content, amino acid content, sugar content, etc. in plants and their parts.
2019

C14-U02 **Soil fumigants, seed protectants and sterilants**
Not for plant protectants post-2014, these should be searched according to the relevant pathogen(s) in C14.
1994
Previous code(s): C12-N07

C14-U03 **Conferring herbicide resistance to plants**
2006

C14-U04 **Conferring pest resistance to plants**
Conferring pest resistance (e.g. fungi, insects) to plants.
2006

C14-U05 **Conferring stress tolerance to plants**
Conferring stress tolerance (e.g. drought, heat) to plants.
2006

C14-V **HERBICIDES**
1994

C14-V **Herbicide (general)**
Used only when the herbicide is not specified as being total or selective.
2015

C14-V01 **Herbicide (total)**
2015
Previous code(s): C12-P05

C14-V02 **Herbicide (selective) (general and others)**
For a specific selective herbicide the code for the crop-type protected applies e.g. C14-V02B applies for selectively killing weeds in rice fields.
1994
Previous code(s): C12-P06

C14-V02A **. Aromatic crops**
Includes herbs.
1994
Previous code(s): C12-P06

C14-V02B **. Cereal crop**
Includes rice.
1994
Previous code(s): C12-P06

C14-V02C **. Fruit crop**
1994
Previous code(s): C12-P06

C14-V02D **. Oil crop**
Includes nuts, sunflower, rape.
1994
Previous code(s): C12-P06

C14-V02E **. Ornamental crop**
1994
Previous code(s): C12-P06

C14-V02F **. Vegetable crop**
1994
Previous code(s): C12-P06

C14-V03 **Post-emergence, pre-emergence for total herbicide**
Used only when the herbicide is stated to be both post- and pre-emergent in action.
1994
Previous code(s): C12-P06

C14-V03A **. Post-emergence**
1994
Previous code(s): C12-P06

C14-V03B **. Pre-emergence**
1994
Previous code(s): C12-P06

C14-V04 **Herbicide safener**
2009
Previous code(s): C14-M01E

C14-V00X **. Combating resistant weeds**
This code is applied in conjunction with one or more codes from section C14-V.
2013

C14-W **INDUSTRIAL**
Covers industrial applications of compounds/compositions e.g. biocides used in industrial cleaning compositions. This code applies in addition to any other property codes.
1994

C14-X **DOMESTIC**
Covers domestic applications of compounds/compositions e.g. fungicides used in decorative materials. This code applies in addition to any other property codes.
1994

C14-Y **GREEN TECHNOLOGY**
Used when processes/productions are kinder to the environment. Also includes environmentally-friendly apparatus.
2006

C14-Z **GREEN FORMULATION**
Used when compositions are kinder to the environment. Includes biodegradable.
2012

C15 VITAMINS (from 201101)

Note that for structurally modified vitamins the suffix A is appended to the relevant parent code. The following compounds, although having vitamin activity, are indexed under the appropriate chemical classification only: nicotinic acid (C07-D04+), pantothenic acid (C10-C04D), folic acid (C06-D09), choline (C10-A22), inositol (C10-E04A), biotin (C06-F03), p-amino-benzoic acid (C10-B02A), linoleic acid (C10-C04E2) and other unsaturated acids.

C15-A **A VITAMINS**

C15-A00 **Vitamin A and carotenoids**
previously coded C03-A
2011

C15-A00A **. Modified vitamin A and carotenoids**
2011

C15-B **B VITAMINS**
2011

C15-B00 **B vitamins general**
2011

C15-B00A **. Modified B vitamins general**
2011

C15-B01 **Vitamin B1 (thiamine)**
previously coded C03-B
2011

C15-B01A **. Modified vitamin B1 (thiamine)**
2011

C15-B02 **Vitamin B2 (riboflavin)**
previously coded C03-C
2011

C15-B02A **. Modified vitamin B2 (riboflavin)**
2011

C15-B06 **Vitamin B6 (pyridoxine)**
previously coded C03-D
2011

C15-B06A **. Modified vitamin B6 (pyridoxine)**
2011

C15-B12 **Vitamin B12 and cobalamine**
previously coded C03-E
2011

C15-B12A **. Modified vitamin B12 and cobalamine**
2011

C15-C **C VITAMINS**

C15-C00 **Vitamins C (ascorbic acid)**
previously coded C03-F
2011

C15-C00A **. Modified vitamin C (ascorbic acid)**
2011

C15-D **D VITAMINS**

C15-D00 **D vitamins general**
previously coded C03-G
2011

C15-D00A **. Modified D vitamins general**
2011

C15-D01 **Vitamin D1**
2011

C15-D01A **. Modified vitamin D1**
2011

C15-D02 **Vitamin D2**
2011

C15-D02A **. Modified vitamin D2**
2011

C15-D03 **Vitamin D3**
2011

C15-D03A **. Modified vitamin D3**
2011

C15-D04 **Vitamin D4**
2020

C15-D04A **. Modified vitamin D4**
2020

C15-D05 **Vitamin D5**
2020

C15-D05A **. Modified vitamin D5**
2020

C15-E **E VITAMINS**

C15-E00 **Vitamin E, tocopherols, tocotrienols**
Includes tocodienols and tocotrienols.
previously coded C03-H
2011

C15-E00A **. Modified vitamin E and tocopherols**
2011

C15-K **K VITAMINS**

C15-K00 **K vitamins general**
previously coded C03-J
2011

C15-K00A **. Modified K vitamins general**
2011

C15-K01 **Vitamin K1**
2011

C15-K01A **. Modified vitamin K1**
2011

C15-K02 **Vitamin K2**
2011

C15-K02A **. Modified vitamin K2**
2011

C15-K03 **Vitamin K3**
2016

C15-K03A **. Modified vitamin K3**
2016

C15-K04 **Vitamin K4**
2016

C15-K04A **. Modified vitamin K4**
2016

C15-K05 **Vitamin K5**
2011

C15-K05A **. Modified vitamin K5**
2011

C15-K06 **Vitamin K6**
2017

C15-K06A **. Modified vitamin K6**
2017

C15-K07 **Vitamin K7**
2020

C15-K07A **. Modified vitamin K7**
2020

C15-P **P VITAMINS**

C15-P00 **Vitamin P**
previously coded C03-K
2011

C15-P00A **. Modified vitamin P**
2011

C15-X **PROVITAMINS**
2011

C15-Z **GENERAL OR UNSPECIFIED VITAMINS**
previously coded C03-L
2011

D:
FOOD, FERMENTATION, DISINFECTANTS, DETERGENTS

D01 Baking, Edible Doughs
D02 Processing Meat, Poultry, Fish
D03 Foodstuffs and Treatment
D04 Treating Water, Waste Water, and Sewage
D05 Fermentation Industry
D06 Sugar and Starch Industry
D07 Skins, Hides, Pelts, Leather, Tobacco
D08 Cosmetics, Dental, Toilet Preparations
D09 Sterilising and Disinfecting, Bandages and Dressings
D10 Animal and Vegetable Oils
D11 Detergents, Soap, Glycerol

D: FOOD, FERMENTATION, DISINFECTANTS, DETERGENTS

In addition to coding a general process (e.g. for dehydrating food in D03-K09), a preferred use is also coded (e.g. especially for production of dried milk, D03-B07).

Normally only main inventive features are coded, e.g. machine for filling pies would be D01-A only - not also under any of a wide range of meat, fruit etc. fillings. However, production of meat filling for pies or sausages would only be coded under the filling.

D01 BAKING, EDIBLE DOUGHS

D01-A **HANDLING DOUGH AND BAKED ARTICLES**

D01-A01 **Bakery ovens**
1972

D01-A02 **Uncooked dough cutting, shaping, dispensing equipment**
1972

D01-A03 **Equipment for transporting batter, dough, bakery products**
1972

D01-A04 **Containers for dough, bakery products**
Including raising boxes.
1972

D01-A05 **Equipment for mixing, rolling dough, batter kneading**
1972

D01-A06 **Treatment of bakery products after cooking**
e.g. cutting, filling.
1972

D01-A **General and others**

D01-B **BAKERY PRODUCTS, FLOUR, DOUGH**

D01-B01 **Flour, additives for flour and dough**
Including fats.

D01-B02 **Bakery products general**
For bakery products containing meat also search D02-A03.

D01-B02A **. Bread**
Including bread crumbs, fried bread and sandwiches. For the product to be considered as bread it must contain yeast as a leavening agent.
1986

D01-B02B **. Cake**
This must have a leavening agent other than yeast such as baking powder or have air or gas bubbles introduced mechanically such as by vigorous whisking (excluding rice cake).
1986

D01-B02C **. Biscuits, crackers, "cookies", rice crackers, unleavened bread**
1986

D01-B02D **. Pizza bases, pastry products, pastry cases**
e.g. for meringues.
1986

D01-B02E **. Noodles, pasta, spaghetti, vermicelli, macaroni**
1986

D01-B02F **. Batter products, pancakes, waffles, fried batter coatings, artificial chips from dough**
For batter coatings D03-H01S is also searchable.
1986

D01-B **General and others**

D02 PROCESSING MEAT, POULTRY, FISH

D02-A **PROCESSING MEAT OR FISH**

D02-A01 **Processing whole meat, hams and poultry**
1971

D02-A02 **Processing whole fish**
e.g. degutting.
1971

D02-A03 **Meat, poultry or fish products, general**
For bakery products containing meat also search D01-B02:
1971

D02-A03A **. Fish paste, fish meal, fish flakes, fish roe (real or artificial), fish extracts**
For fish extracts used as flavouring also search D03-H01C.
1986

D02-A03B **. Minced meat, meat paste, chopped meat**
Including chicken, turkey, lamb, beef, pork, etc. but excluding sausages.
1986

D02-A03C **. Sausages, processing meat for sausages, but excluding skins**
1986

D02-A03D **. Sausage skins and devices for filling skins**
1986

D02-A03E **. Artificial meat, excluding sausages**
1986

D02-A **General and others**

D03 FOODSTUFFS AND TREATMENT

D03-A **PRESERVATION**

D03-A01 **Meat or sausages**

D03-A02 **Fish, fish roe, sea food and products**

D03-A03 **Eggs and products**
Including turtle eggs.

D03-A04 **Vegetables, fruit or mushrooms**

D03-A05 **Edible seeds**
e.g. cereals and nuts.

D03-A **General and others**

D03-B **MILK AND MILK PRODUCTS**

D03-B01 **Production of curds in milk**
1972

D03-B02 **Separation of curds and whey**
1972

D03-B03 **Moulding cheese**
1972

D03-B04 **Additives for cheese**
1972

D03-B05 **Transporting cheese and packing**
1972

D03-B06 **Cheese (other than above)**
Including stillage, maturing and bean curd (tofu).
1972

D03-B07 **Milk concentrates**
e.g. powder
1972

D03-B08 **Milk additives**
1972

D03-B09 **Testing milk**
1972

D03-B10 **Transporting milk; carriers for milk**
1972

D03-B11 **Synthetic milk**
Including bean milk.
1972

D03-B12 **Butter**
Excluding butter substitutes, see D03-C.
1994
Previous code(s): D03-B

D03-B13 **Cream**
Includes artificial cream.
1994
Previous code(s): D03-B

D03-B14 **Yoghurt**
1994
Previous code(s): D03-B

D03-B15 **Milk general**
2011

D03-B **General and others**

D03-C **BUTTER SUBSTITUTES, EDIBLE OILS, FATS**

D03-C **General**

D03-C01 **Cooking and edible oils (liquid)**
1994
Previous code(s): D03-C

D03-C02 **Margarine, spreads and cooking fats (solid)**
1994
Previous code(s): D03-C

D03-D **COFFEE, TEA AND SUBSTITUTES**

D03-D **Coffee, tea and substitutes, general**

D03-D01 **Coffee general**
1986

D03-D01A **. Packaging**
Including coffee bags.
1986

D03-D01B **. Extraction**
Including decaffeination, concentration, freeze drying and freeze dried coffee.
1986

D03-D01C **. Grinding, cutting**
1986

D03-D01D **. Steaming, roasting, drying**
Excludes extraction D03-D01B.
1986

D03-D02 **Tea general**
1986

D03-D02A **. Packaging**
Including tea bags.
1986

D03-D02B **. Extraction**
Including decaffeination, concentration, freeze drying.
1986

D03-D02C **. Grinding, cutting**
1986

D03-D02D **. Steaming, drying, fermenting, roasting**
Excludes extraction D03-D02B.
1986

D03-D03 **Artificial tea or coffee or beverages such as herbal tea**
Excluding D03-D01: and D03-D02: search also D03-H01G.
1986

D03-D03A **. Artificial coffee**
2011

D03-D03B **. Artificial tea**
2011

D03-E **COCOA AND CONFECTIONERY**

D03-E01 **Transporting confectionery**
1972

D03-E02 **Coating confectionery and ice cream**
1972

D03-E03 **Shaping confectionery and ice cream**
1972

D03-E04 **Packing confectionery and ice cream**
1972

D03-E05 **Cooking and mixing ingredients for confectionery**
1972

D03-E06 **Dispenser for confectionery**
Including filling.
1972

D03-E07 **Chocolate and cocoa products**
1972

D03-E08 **Ice cream and similar frozen products**
1972

D03-E09 **Chewing gum**
1994
Previous code(s): D03-E

D03-E10 **Candy general**
2002

D03-E10A **. Hard candy**
2002

D03-E10A1 **.. Chocolate**
2002

D03-E10A2 **.. Non-chocolate**
2002

D03-E10B **. Chewy candy**
2002

D03-E10B1 **.. Chocolate**
2002

D03-E10B2 **.. Non-chocolate**
2002

D03-E11 **General**
2002

D03-E **General and others**
2002

D03-F **PROTEINS, PHOSPHATIDES**

D03-F01 **Protein recovery - from other sources**
1972

D03-F02 **Protein recovery - from soya beans**
1972

D03-F03 **Protein recovery - from micro-organisms**
1972

D03-F04 **Protein recovery - from animal or fish waste**
1972

D03-F05 **Shaping of protein (threads and films)**
1972

D03-F06 **Protein compositions**
1972

D03-F07 **Phosphatides**
1972

D03-F **General and others**

D03-G **ANIMAL FEEDS**

D03-G01 **Fodder additives**
1971

D03-G02 **From microorganisms**
e.g. yeasts.
1972

D03-G03 **From animals**
e.g. offal, excrement.
1972

D03-G04 **From plants**
e.g. beet residues.
1972

D03-G05 **From fish; insects**
e.g. stick water.
1972

D03-G06 **Special shape animal feeds**
Including synthetic dog bones.
1972

D03-G **General and others**

D03-H **FOODSTUFFS, GENERAL AND PRESERVATION**

D03-H **Foodstuffs not provided for, general**

D03-H01 **FOODSTUFF GENERAL**

D03-H01 **Foodstuffs; non-alcoholic beverages and preparations not provided for elsewhere, general**

D03-H01A . **Sweetening agents**
Not additionally searchable under D03-H01T.
1972

D03-H01B . **Chemical flavouring agents**
See also D03-H01D.
1972

D03-H01B1 .. **Taste masking**
2002

D03-H01B2 .. **Taste enhancing**
2002

D03-H01C . **Natural flavouring agents**
e.g. natural extracts (see also D03-H01D).
1972

D03-H01D . **Flavouring agents of special form**
1972

D03-H01E . **Food colourants (general)**
1972

D03-H01E1 .. **Natural food colorant**
2007
Previous code(s): D03-H01E

D03-H01E2 .. **Synthetic food colorant**
2007
Previous code(s): D03-H01E

D03-H01F . **Carbonated non-alcoholic beverages**
1972

D03-H01G . **Non-alcoholic beverages**
Except D03-H01F.
1972

D03-H01G1 .. **Fruit Juices**
2011

D03-H01H . **Fluid foods**
e.g. sauces, soups, mayonnaise, emulsions except D03-H01F and D03-H01G.
1972

D03-H01J . **Gelled food products, thickeners**
From 2007, jam, marmalade and other conserve are coded under D03-H01V.
1972

D03-H01K . **Foods with special shape**
Except D03-H01J.
1972

D03-H01L . **Dehydrated or concentrated foods**
Includes instant foods.
1972

D03-H01M . **Partially cooked foods**
Except D03-H01L.
1972

D03-H01N . **Emulsifiers for food**
1972

D03-H01P . **Antioxidants for food**
1972

D03-H01Q . **Stabilisers for food, humectants**
Except D03-H01P,N,R.
1972

D03-H01R **. Binders for food**
1972

D03-H01S **. Coatings for food; coated food products**
Except D03-H01R.
1972

D03-H01T **. Low calorie, health and dietary foods, general**
Except D03-H01A.
1972

D03-H01T1 **.. Dietary fibre (bran/roughage etc.)**
1994
Previous code(s): D03-H01T

D03-H01T2 **.. Other health**
1994
Previous code(s): D03-H01T

D03-H01T2A **... Probiotics/prebiotics**
2006

D03-H01T2B **... Others, not pro/prebiotics or vitamin preparations**
2006

D03-H01T2C **... Vitamin preparations**
2011

D03-H01T3 **.. Low calorie**
1994
Previous code(s): D03-H01T

D03-H01T3A **... Low fat**
2005

D03-H01T3B **... Low carbohydrate**
2005

D03-H01T4 **.. High calorie foodstuff; energy boosters**
e.g. energy bars.
2005

D03-H01T5 **.. Special dietary requirement foods**
e.g. diabetic, gluten free.
2006
Previous code(s): D03-H01T

D03-H01U **. Fried foodstuff**
2005

D03-H01V **. Jam/marmalade/other conserve**
2007
Previous code(s): D03-H01J

D03-H02 **PRESERVING FOODSTUFFS**

D03-H02 **Preserving**
e.g. pasteurising, sterilising, freezing, refrigeration, drying, freeze drying. For specific food, search under appropriate D01-A: to D03-H01: code only. For dehydrated food see also D03-H01L.

D03-H02A **. By freezing, cooling or refrigeration**
1986

D03-H02B **. By heat sterilisation or drying**
1986

D03-H02B1 **.. By heat sterilisation**
E.g. pasteurisation. Add D03-H02C for heating by irradiation e.g. with microwave.
2011

D03-H02B2 **.. By drying**
2011

D03-H02B2A **... Drying with heating**
Add D03-H02C for heating by irradiation e.g. with microwave.
2011

D03-H02B2B **... Drying without heating**
E.g. by evaporation at ambient temperature or sun drying.
2011

D03-H02C **. By irradiation**
1986

D03-H02D **. By adding salt or acid (pickling) or sugar**
1986

D03-H02E **. By other additives**
Except antioxidants see D03-H01P.
1986

D03-H02F **. By sterile packaging**
e.g. canning or sealed bags. (Search also D03-K and other D03-H02: codes if applicable e.g. for heat sterilisation with canning, search D03-H02F and D03-H02B).
1986

D03-J **FOODSTUFF MACHINERY FOR**

D03-J01 **Treating grain**
1972

D03-J02 **Treating nuts**
Including peanuts and coffee beans.
1972

D03-J03 **Removing stones and pips from fruit**
1972

D03-J04 **Peeling fruit**
Including pumpkins, melons, marrows and zucchini (courgettes).
1972

D03-J05 **Washing fruit**
Including pumpkins, melons, marrows and zucchini (courgettes).
1972

D03-J06 **Cutting or crushing fruit**
Including pumpkins, melons, marrows and zucchini (courgettes).
1972

D03-J07 **Peeling vegetables**
Including peas, beans, mushrooms and cauliflowers.
1972

D03-J08 **Washing vegetables**
Including peas, beans, mushrooms and cauliflowers.
1972

D03-J09 **Cutting or crushing vegetables**
Including "topping and tailing", coring and pulping; e.g. of peas, beans, mushrooms and cauliflowers.
1972

D03-J10 **Preparation of animal feeds**
1972

D03-J11 **Popcorn making**
2005

D03-J **General and others**
Includes "topping and tailing", coring and pulping.

D03-K **SHAPING OR WORKING OF FOODSTUFFS**

D03-K01 **Cooking and baking general, ovens**
Includes roasting.
1972

D03-K01A . **Microwave**
2013

D03-K01B . **Fryer**
2013

D03-K01C . **Grill**
2013

D03-K02 **Grading devices for food**
1972

D03-K03 **Testing and monitoring liquid food**
1972

D03-K04 **Testing and monitoring solid food**
1972

D03-K05 **Cutting devices for food**
1972

D03-K06 **Moulding of food**
e.g. extrusion.
1972

D03-K07 **Mixing or stirring food**
1972

D03-K08 **Transporting, packing and storage devices for food**
e.g. containers.
1972

D03-K08A . **Green packaging**
Biodegradable packaging/plastics, recyclable packaging, arrangements allowing use of smaller amount of materials in packaging etc.
2011

D03-K08B . **Food packaging materials**
2014

D03-K09 **Devices for concentrating or drying food**
1972

D03-K10 **Dispenser for foodstuff**
2005

D03-K11 **Labelling system for foodstuff**
2005

D03-K12 **Defrosting foodstuff**
2005

D03-K13 **Green food technology**
Includes non-waste or environmentally friendly food technology.
2011

D03-K14 **Food cooling device**
Device or system for cooling the interior of a food processing machine; a food cooling system.
2014

D03-K **General and others**

D03-L **RICE AND PRODUCTS**
1994

D03-L **Rice and products**
Excluding D01-B02C.
1994
Previous code(s): D03-H01

D03-M **EGG AND PRODUCTS**
1994

D03-M **Egg and products**
1994
Previous code(s): D03-H01

D03-N **VEGETABLE PRODUCTS**
Not to be used in conjunction with D03-A and/or D03-J.
2005

D03-P **FRUIT PRODUCTS**
Not to be used in conjunction with D03-A and/or D03-J.
2005

D03-Q	**NUT AND EDIBLE SEED PRODUCTS** Not to be used in conjunction with D03-A and/or D03-J. **2005**
D03-R	**CEREAL PRODUCTS** Not to be used in conjunction with D03-A and/or D03-J. **2005**
D03-S	**BABY FOOD ONLY** Used in conjunction with other codes in section D. **2007**

D04 TREATING WATER, WASTE WATER AND SEWAGE

D04-A	**TREATMENT OF THE WATER** see also D04-B: for impurities removed
D04-A	**Water treatment process general**
D04-A01	**Purification general**
D04-A01A	**. By distillation** **1972**
D04-A01B	**. By precipitation, sedimentation, flocculation** See D04-B09. **1972**
D04-A01C	**. By freezing, crystallisation** **1972**
D04-A01D	**. Membranes for reverse osmosis** **1972**
D04-A01E	**. Apparatus for reverse osmosis, membrane filtration and ultra-filtration** **1972**
D04-A01F	**. By other filtration processes, adsorption, active C** **1972**
D04-A01F1	**.. Other filtration process** **2005**
D04-A01F2	**.. Active C treatment** **2005**
D04-A01F3	**.. Other adsorption processes** **2005**
D04-A01G	**. By ion exchange** **1972**
D04-A01H	**. Measuring purity of water** **1972**
D04-A01J	**. Biological process** e.g. sewage treatment. Not used when D04-B10 codes are applied. **1986**
D04-A01K	**. By oxidation/aeration** **1986** *Previous code(s): D04-B08*
D04-A01K1	**.. Oxidation with ozone** **2005**
D04-A01K2	**.. Oxidation / aeration with other** **2005**
D04-A01L	**. By flotation** **1986** *Previous code(s): D04-B09*
D04-A01M	**. By electrochemical process** **1986**

D04-A01N . **By extraction**
1986

D04-A01P . **By other method**
Including other chemical, decanting.
1986

D04-A01P1 .. **Chemical method**
Includes adding polymers.
2005

D04-A01P2 .. **Physical method**
2005

D04-A01P2A ... **By irradiation**
2011

D04-A01Q . **Magnetic water treatment**
1994
Previous code(s): D04-A01P

D04-A02 **Sterilisation of water**
1972

D04-A03 **Scale prevention, deoxygenation and anti-corrosion general**
1972

D04-A03A . **Scale prevention**
1986

D04-A03B . **Deoxygenation and degassification of water**
1986

D04-A03C . **Anti-corrosion**
1986

D04-A04 **Physiological amelioration of potable water by specific additives**

D04-A05 **Containment of waste to prevent contamination of water**
e.g. (i) preventing herbicides from reaching water, (ii) enclosing waste in another material.
1994

D04-A06 **Apparatus for recycling waste water**
2007

D04-B **IMPURITY REMOVAL FROM WATER**
Prior to 198601 these codes are applied only to the removal of impurities from waste water, after 198601 they are applied to domestic or industrial waste water or natural water. Also search D04-A: for method of removal.

D04-B **Impurity removal from water general**

D04-B01 **Of sewage**
1971-1976

D04-B02 **Of aqueous industrial effluent, oil pollution**
1972-1976

D04-B03 **Removal of mineral oil, hydrocarbons, coal slurry**
1977

D04-B04 **Removal of natural products**
Including protein, starch, animal and vegetable fats and oils, natural animal, plant and fish material from power station inflow.
1977

D04-B05 **Removal of metals**
Including metal compounds, excluding alkali(ne earth) metal compounds.
1977

D04-B05A . **Removal of heavy metals**
Used for where the patent vaguely mentions removal of heavy metals or removal of 2nd, 3rd row transition metals, Lanthanides or Actinides.
2005

D04-B05B . **Removal of other metals**
2005

D04-B06 **Removal of specified organic materials, general and other**
1977

D04-B06A . **Removal of phenolic compounds**
1986

D04-B06B . **Removal of organic dyes, optical brighteners**
1986

D04-B06C . **Removal of surfactants**

D04-B06D . **Removal of polymers and polymer monomers**
1986

D04-B06E . **Removal of halohydrocarbons**
1994
Previous code(s): D04-B06

D04-B07 **Removal of specified inorganic and radioactive materials, general and other**
1977

D04-B07A . **Removal of inorganic cyanides or (thio)cyanates**
1986

D04-B07B . **Removal of inorganic phosphorus compounds**
1986

D04-B07C . **Removal of inorganic nitrogen compounds**
Excluding urea and cyanides but including nitrates, ammonia and inorganic carbamates.
1986

D04-B07D **. Removal of inorganic sulphur compounds**
1986

D04-B07E **. Removal of inorganic fluorine compound**
1986

D04-B07F **. Desalination of brine or sea water**
1986

D04-B07G **. Demineralisation of water**
2012

D04-B08 **Oxidation/aeration of waste water**
From 198601 search D04-A01K.
1977-1985

D04-B09 **Sedimentation, addition of flocculants to waste water, flotation**
From 198601 search D04-A01B or D04-A01L.
1977-1985

D04-B10 **Sewage sludge from water**
Separation, solidification of sludge, treatment of sludge general.
1977

D04-B10A **. Dewatering sludge**
1986

D04-B10B **. Pyrolysis of sludge**
Excluding D04-B10A.
1986

D04-B11 **General sewage treatment**
From 198601 search D04-A:.
1977-1985

D04-C **GAS IMPREGNATED WATER E.G. WITH CARBON DIOXIDE**

D04-C **General**

D04-D **ENVIRONMENTALLY-FRIENDLY WATER PROCESSING**
2013

D05 FERMENTATION INDUSTRY

D05-A **INDUSTRIAL FERMENTATION PROCESSES GENERAL**

D05-A **General**

D05-A01 **Enzyme bound to carrier general**
1977

D05-A01A **. Carrier general**
1986

D05-A01A1 **.. Polysaccharide**
1986

D05-A01A2 **.. Polymer**
Excluding natural polymers.
1986

D05-A01A3 **.. Non-polymeric organic compound**
e.g. hapten.
1986

D05-A01A4 **.. Natural material other than above**
e.g. antibody.
1986

D05-A01A5 **.. Inorganic material**
e.g. glass, metal, silica, clay, mineral.
1986

D05-A01B **. Fixed enzyme general**
1986

D05-A01B1 **.. Oxidoreductase**
1986

D05-A01B2 **.. Transferase**
1986

D05-A01B3 **.. Hydrolase**
1986

D05-A01B4 **.. Lyase**
1986

D05-A01B5 **.. Isomerase**
1986

D05-A01B6 **.. Ligase (synthetase)**
1986

D05-A01B7 **.. Translocase**
Enzymes in class EC7.
2023

D05-A01C **. Process general**
1986

D05-A01C1 **.. Apparatus using fixed enzyme**
1986

D05-A01C2 **.. General methods of binding enzymes to carriers**
D05-A01C: codes are only applied if the scope of both the enzyme and the carrier are broad. Only the inventive feature is searchable. For example if a hydrolase is bound to any carrier, then only the code D05-A01B3 is searchable not D05-A01A.
1986

D05-A02 **Other enzyme process (non-fixed) general**
1977

D05-A02A **. Oxidoreductase**
1986

D05-A02B **. Transferase**
1986

D05-A02C **. Hydrolase**
1986

D05-A02D **. Lyase**
1986

D05-A02E **. Isomerase**
1986

D05-A02F **. Ligase (synthetase)**
1986

D05-A02G **. Translocase**
Enzymes in class EC7.
2023

D05-A03 **Fermentation apparatus general**
Excluding organic waste fermentation.
1977

D05-A03A **. Carriers for microorganisms, microorganisms bound to carriers**
Includes both devices and methods specifically using immobilised microorganisms.
1986

D05-A03B **. Automated fermentation vessels**
Excluding sewage treatment.
1986

D05-A03C **. Mixing devices for fermentation vessels, aeration of the medium**
Excluding sewage treatment. The recovery of microorganisms from the medium and preparation of the medium (e.g. comminuting waste for fermentation) is searched under D05-A04. Recovery of products is searched under D05-C.
1986

D05-A04 **Other fermentation processes general**
1977

D05-A04A **. Organic waste, town waste or sludge fermentation**
1986

D05-A04B **. Culture media and their preparation for industrial fermentation, comminuting waste for fermentation**
Aeration and mixing devices for media during fermentation - see D05-A03C.
1986

D05-A04C **. Cultivation of mushrooms, shiitake, Basidiomycetes etc.**
Includes both apparatus and methods used in any aspect of mushroom cultivation.
1986

D05-A04D **. Fermented foods and fermented non-alcoholic drinks**
Includes both apparatus and methods used in any aspect of fermented foods and fermented non-alcoholic drinks.
2007
Previous code(s): D03-H01

D05-B **BREWING, ETHANOLIC FERMENTATION**

D05-B01 **Malting grains and mash processing**
Includes both apparatus and methods used in malting grain and mash processing.
1986, 2010

D05-B01A **. Malting grains**
Malting involves soaking grains, allowing them to germinate and then drying. Includes barley steeping device for malt.
2010

D05-B01B **. Mash processing**
Mash processing or preparation. Also includes devices used for mash preparation.
2010

D05-B02 **Brewing beer, fermentation to give beer-type drinks, low-calorie beer**
For low calorie beer also search D03-H01T.
1986

D05-B03 **Fermentation device/process to give ethanol as the main product**
1986

D05-B03A **. Fermentation device/process to give substituted ethanol as main product**
Includes all substituted ethanols e.g. fluorophenylethanol.
2014

D05-B04 **Fermentation yeast**
Includes yeast blocks, fermentation to give yeast as the main desired product, use of yeast in brewing, baking or animal feeds.
1986

D05-B **General and others**

D05-C **CHEMICALS BY FERMENTATION (BIOSYNTHESIS)**
This section is not additionally searched under D05-A03: or D05-A04: Polypeptides and proteins (including enzymes) which are produced by genetically engineered microorganisms are searched under D05-C and under D05-H17. Polypeptides and proteins (including enzymes) which are produced by engineered cell lines (i.e. not by microorganisms and so not defined as fermentation) are only searched under D05-H17.

D05-C01 **Amino acids**
Also includes substitutions such as 4-oxoproline.
1971

D05-C02 **Antibiotics**
1971

D05-C03 **Enzymes**
1971

D05-C03A **. Coenzymes**
1986

D05-C03B **. Oxidoreductases**
1986

D05-C03C **. Hydrolases**
1986

D05-C03D **. Transferases**
1986

D05-C03E **. Lyases**
1986

D05-C03F **. Isomerases**
1986

D05-C03G **. Ligases (synthetases)**
1986

D05-C04 **Steroids**
1971

D05-C05 **Nucleotides**
1972

D05-C06 **Nucleosides**
1972

D05-C07 **Nucleic acids**
1972

D05-C08 **Sugars**
Including polysaccharides, sugar amines and sugar acids. Also all syrups.
1972

D05-C09 **Aliphatic acids**
Excepting any acids covered under higher codes. May be substituted but the acid functionality must be retained. Also includes fatty acids.
1972

D05-C10 **Vitamins**
1972

D05-C11 **Polypeptides**
1986

D05-C12 **Specific proteins, excluding enzymes**
1986

D05-C13 **Biomass and non-specific proteins, yeast proteins (not yeast itself)**
1986

D05-C14 **Methane**
1986

D05-C15 **Unsubstituted alcohols excluding ethanol**
For aromatic, cyclic or aliphatic alcohols and may include diols and triols (e.g. ethylene glycol, propanetriol). Sugar alcohols code as D05-C17.
1986

D05-C16 **Di- or tripeptides**
e.g. glutathione
2009

D05-C17 **Sugar alcohols**
2010

D05-C18 **Pigments**
2010

D05-C19 **Lipids**
Includes all lipids including glycerolipids, phospholipids, sphingosine, cephalin, ceramide, oils and its derivatives.
2014

D05-C20 **Hydrogen**
2014

D05-C21 **Polymers**
Production of all polymers, excepting polypeptides and polysaccharides.
2015

D05-C22 **Flavones or flavanoids**
2016

D05-C23 **Other acids**
Including sulfur and phosphorus acids, but excepting amino acids (search under D05-C01), nucleic acids (search under D05-C07), sugar acids (search under D05-C08) and aliphatic and fatty acids (search under D05-C09). This code is applied for acids with non-aliphatic portions such as phenyllactic acid.
2016

D05-C24 **Saponins**
2021

D05-C25 **Terpenes**
2021

D05-C26 **Alkaloids**
Alkaloids synthesised by means of fermentation or extracted or purified from plant source or by means of biosynthesis.
2022

D05-C **Others; general.**
Excluding ethanol

D05-D **DISTILLATION AND RECTIFICATION OF FERMENTED SOLUTIONS, BY-PRODUCT RECOVERY, DENATURING OF ALCOHOL**

D05-D **General**

D05-E **WINE, ALCOHOLIC BEVERAGES**
Includes apparatus and methods for production.

D05-E **General**

D05-F **PASTEURISATION, STERILISATION, PRESERVATION, CLARIFICATION, AGEING ALCOHOLIC BEVERAGES**

D05-F **General**

D05-G **VINEGAR**
Includes apparatus and methods for production.

D05-G **General**

D05-H **MICROBIOLOGY, LABORATORY PROCEDURES**

D05-H01 **Culture media**
1972

D05-H02 **Culture apparatus**
1972

D05-H03 **Formation of microbial mutants**
1972

D05-H03A **. By random method-chemically or by irradiation**
1986

D05-H03B **. By recombinant DNA technology**
From 1994, microbial mutants (and non-microbial mutants) obtained by recombinant DNA techniques are searched under D05-H14. New methods of forming microbial and non-microbial mutants are searched under D05-H18.
1986-1993

D05-H04 **Newly discovered, testing of, isolation of, identification of and detection of bacteria**
May also be used in combination with D05-H18B code. Mutants code here but recombinant bacteria are searched under D05-H14A.
1972

D05-H05 **Newly discovered, testing of, isolation of, identification of and detection of fungi**
May also be used in combination with D05-H18B code. Mutants code here but recombinant fungi are searched under D05-H14A2.
1972

D05-H06 **Newly discovered, testing of, isolation of, identification of and detection of viruses and other**
1972

D05-H06A **. Newly discovered, testing of, isolation of, identification of and detection of viruses**
May also be used in combination with D05-H18B code. Mutants code here but recombinant viruses are searched under D05-H12F.
2002

D05-H06B **. Newly discovered, testing of, isolation of, identification of and detection of prions**
2002

D05-H07 **Production of vaccines, antigens**
1972

D05-H08 **Cell or tissue culture general or unspecified**
Search when the culture is not specified or when both of the sub-codes are applicable.
1972

D05-H08A **. Microorganism culture**
Includes microbes.
2016

D05-H08B **. Animal/plant cells culture**
Plant and animal cells.
2016

D05-H09 **Testing and detection other than D05-H04, D05-H05 and D05-H06**
May be used in combination with D05-H18B.
1986

D05-H10 **Fixing biological substances or cells to a carrier and the carriers themselves**
Excludes microorganisms and enzymes. Microorganisms and enzymes bound to carriers are searched under D05-A codes.
1986

D05-H11 **Antibodies**
Restricted to monoclonal antibodies only prior to 1994.
1986

D05-H11A **. Monoclonal antibodies**
1994
Previous code(s): D05-H11

D05-H11A1 **.. Monoclonal antibodies prepared by hybridoma techniques**
1994
Previous code(s): D05-H11

D05-H11A2 **.. Monoclonal antibodies prepared by recombinant DNA techniques**
Includes CDR-grafted, humanised and chimeric antibodies; antibodies produced in transgenic animals and antibodies or fragments thereof fused to physiologically active polypeptides such as enzymes or toxins. The production of engineered antibodies and fusion proteins comprising an antibody or antibody fragment is searched under D05-H17A1, D05-H17B1 or D05-H17C1 codes.
1994
Previous code(s): D05-H11

D05-H11B **. Polyclonal antibodies**
1994

D05-H11C **. Abzyme**
A catalytic antibody.
2005

D05-H12 **DNA, cDNA, transfer vectors, RNA**
1986

D05-H12A **. Wild-type coding sequences**
Includes new genes and gene fragments. Wild-type (or "native") coding sequences code for the normal, functional version of a protein. Wild-type coding sequences that are fused to other sequences are searched under D05-H12A if they encode the major expression product, after any post-translational processing, e.g. after cleavage from a signal peptide.
1994
Previous code(s): D05-H12

D05-H12B **. Mutant sequences**
Sequences which encode variant proteins (muteins) and truncated proteins, whether functional or not. Mutant coding sequences which are fused to other sequences are searched under D05-H12B if they encode the major expression product after any post-translational processing.
1994
Previous code(s): D05-H12

D05-H12B1 **.. Naturally occurring mutant sequences**
e.g. mutant allele, polymorphism.
1994
Previous code(s): D05-H12

D05-H12B2 **.. Engineered mutant sequences**
1994
Previous code(s): D05-H12

D05-H12C **. Fusion genes, transgenes**
Includes all fusion genes, transgenes, chimeric or hybrid genes coding for proteins in which all the fused regions are present in the functional translation product. Excludes constructs in which a coding sequence (wild-type or mutant) is fused to e.g. a secretion signal or protease cleavage site such that the major protein product following any post-translational processing is not the intact fusion protein. In these cases, the code D05-H12A or D05-H12B is applied as appropriate.
1994
Previous code(s): D05-H12

D05-H12D **. DNA, cDNA, RNA non-coding sequences**
1994
Previous code(s): D05-H12

D05-H12D1 **.. Primers, probes**
1994
Previous code(s): D05-H12

D05-H12D2 **.. Antisense sequences/constructs**
1994
Previous code(s): D05-H12

D05-H12D3 **.. Triple-helix forming oligonucleotides**
1994
Previous code(s): D05-H12

D05-H12D4 **.. Ribozyme**
1994
Previous code(s): D05-H12

D05-H12D5 **.. Transcription/translation regulation sequences**
Includes new or modified enhancers, promoters and upstream activating sequences.
1994
Previous code(s): D05-H12

D05-H12D6 **.. Other specified non-coding sequences**
1994

D05-H12D6A **... Aptamer**
2006
Previous code(s): D05-H12

D05-H12D7 **.. DNAzyme**
Catalytic DNA sequence.
2005

D05-H12D8 **.. Short interfering RNA / micro RNA general**
2005

D05-H12D8A **... siRNA**
Double-stranded short RNA molecules which bind RNAs and target them for degradation and/or destruction.
2005

D05-H12D8B **... miRNA**
Single-stranded RNA molecules which that are processed from larger stem-looped precusors by Dicer.
2005

D05-H12D8C **... Small hairpin RNA**
2006

D05-H12D9 **.. PNA**
Peptide nucleic acids.
2005

D05-H12D10 **.. Aptamer**
Code retired. All instances in the backfile corrected to D05-H12D6A.
2006-2015

D05-H12E **. Vectors**
Includes viral vectors (e.g. Baculovirus vectors, phagemids), plasmid vectors, cosmids and transposons.
1994
Previous code(s): D05-H12

D05-H12F **. Recombinant viruses (excluding viral vectors)**
Includes recombinant viruses other than those used as vectors, e.g. viruses which have been attenuated for use in vaccines. Naturally occuring viral strains are searched under D05-H06.
1994
Previous code(s): D05-H03B

D05-H12G **. Reporter/marker nucleic acid**
2009

D05-H12H **. Capped nucleic acid sequences**
Includes sequences with trinucleotide cap and trinucleotide mRNA cap. To be searched alongside all other applicable codes from D05-H: relating to the nucleic acid.
2024

D05-H13 **Recovery of biological substances and materials, ultra-filtration**
1986

D05-H14 **Recombinant cells**
Host cells (prokaryotic and eukaryotic) transformed by a recombinant DNA vector.
1994

D05-H14A **. Recombinant microbial cells (unspecified)**
1994
Previous code(s): D05-H03B

D05-H14A1 **.. Recombinant bacteria**
1994
Previous code(s): D05-H03B

D05-H14A2 **.. Recombinant fungi (including yeast)**
1994
Previous code(s): D05-H03B

D05-H14A3 **.. Other recombinant microorganisms (e.g. Protozoa)**
1994
Previous code(s): D05-H03B

D05-H14B **. Recombinant cell lines (unspecified)**
1994

D05-H14B1 **.. Recombinant insect cells**
1994

D05-H14B2 **.. Recombinant mammalian cells**
Excludes antibody-producing cells and hybridomas. Such cells are searched under D05-H15.
1994

D05-H14B3 **.. Recombinant plant cells**
1994

D05-H14B4 **.. Other specified recombinant cell lines**
1994

D05-H15 **Antibody-producing cells, hybridomas**
1994-2014

D05-H15A **. Antibody producing cells/ hybridoma**
A cell line for producing monoclonal antibodies; produced by fusing antibody-secreting B cells with lymphocyte tumor cells.
2005

D05-H15B **. Other chimeric/fused cells**
Cell lines comprising or formed from components derived from 2 separate cell types, and excluding antibody producing hybridomas.
2005

D05-H16 **Transgenic organisms**
1994

D05-H16A **. Transgenic animal**
1994

D05-H16B **. Transgenic plant**
Includes plants cultured from cells which are manipulated by genetic engineering techniques.
1994

D05-H16C **. Transomatic animal**
An animal which has gene(s) from another cell or organism stably incorporated into some but not all cells.
2005

D05-H16D **. Transomatic plant**
2005

D05-H17 **Recombinant protein/polypeptide production**
Production of polypeptides and proteins by recombinant DNA techniques is searched under D05-H17. Includes production of heterologous proteins in a genetically engineered host or transgenic organism, enhanced production of host proteins and production of genetically engineered antibodies. If the host is microbial, e.g. a bacterium or fungus, D05-H17 codes are applied in addition to the appropriate D05-C codes.
1994

D05-H17A **. Wild type protein/polypeptide production**
Includes production of wild-type proteins with more than one subunit except where these are expressed as a fusion protein.
1994

D05-H17A1 **.. Production of engineered wild-type antibodies**
1994

D05-H17A2 **.. Production of wild-type cytokine, lymphokine, growth factor, hormone**
1994

D05-H17A3 **.. Production of wild-type enzyme**
1994

D05-H17A4 **.. Production of wild-type receptor**
1994

D05-H17A5 **.. Production of wild-type antigen**
1994

D05-H17A6 **.. Production of other specified wild-type protein**
1994

D05-H17A7 **.. Production of wild-type zinc finger protein**
A protein which contains (or is capable of binding) zinc ions through cysteine residue (or a combination of cysteine and histidine residues). Zinc fingers function in helping some proteins that bind to DNA recognize that DNA.
2005

D05-H17B **. Mutant protein/polypeptide production**
Includes production of mutant proteins comprising more than one subunit and production of proteins in which different subunits are derived from different sources, except where these are expressed as a fusion protein.
1994

D05-H17B1 **.. Production of engineered mutant antibodies**
1994

D05-H17B2 **.. Production of mutant cytokine, lymphokine, growth factor, peptide hormone**
1994

D05-H17B3 **.. Production of mutant enzyme**
1994

D05-H17B4 **.. Production of mutant receptor**
1994

D05-H17B5 **.. Production of mutant antigen**
1994

D05-H17B6 **.. Production of other specified mutant protein**
1994

D05-H17B7 **.. Production of mutant zinc finger protein**
2005

D05-H17C **. Fusion protein/polypeptide production**
Includes fusion proteins where the fused translation product remains intact as the functional (or multifunctional) protein, e.g. a cell-binding region fused to a catalytic region, a membrane-anchoring sequence fused to an antigenic region, etc. Excludes "fusion proteins" which undergo post-translational processing to produce separate protein entities. In these cases, the major cleavage product is coded in D05-H17A or D05-H17B, as appropriate.
1994

D05-H17C1 **.. Production of fusion protein comprising an antibody or antibody fragments**
1994

D05-H18 **Genetic engineering techniques, new methods**
Includes transfection techniques.
1994

D05-H18A **. Nucleic acid sequencing method**
1994

D05-H18B **. Nucleic acid amplification, general or unspecified**
Detection methods coded in D05-H04, D05-H05, D05-H06 or D05-H09 which rely on nucleic acid amplification e.g. for detection of specific microbial strains or specific polymorphisms are additionally searched under D05-H18B codes.
1994

D05-H18B1 **.. Thermocycling nucleic acid amplification method**
Includes PCR and LCR.
2022

D05-H18B2 **.. Isothermal and other nucleic acid amplification method**
2022

D05-H19 **Biological materials for use in genetic engineering (general)**
1994

D05-H19A **. Newly discovered restriction endonucleases and methylases**
1994

D05-H19B **. New or modified DNA polymerases, RNA polymerases**
Includes reverse transcriptase.
1994

D05-H19C **. CRISPR system**
Clustered Regularly Interspaced Short Palindromic Repeats (includes claimed CRISPR enzymes e.g. Cas). This code covers either or both of the nucleic acid and the enzyme involved in the system.
2015

D05-H20 **Electroporation**
Includes both apparatus and methods used for electroporation.
2007

D05-H99 **Patent with Geneseq record**
For patents in D16 with associated Geneseq record.
2017

D05-H **General and others**

D05-J **BREWING DEVICES**
Including pitching, machines, and cellular tools

D05-J **General**

D05-K	**BIOLEACHING** Includes methods and processes of bioleaching, specific bioleaching microorganisms and improving conditions for bioleaching. Where the microorganisms are claimed as new, they will also be coded under the appropriate section from D05-H04, D05-H05 and/or D05-H06. **2019**
D05-K	**General** **2019**

D06 SUGAR AND STARCH INDUSTRY

D06-A	**PROCESSING RAW MATERIALS** Including cutting mills, shredding knives, pulp presses.
D06-B	**Treatment of sugar juices**
D06-C	**Processing raw sugar** Includes centrifuging, sugar crystals, testing sugar solutions, purification.
D06-D	**Evaporation apparatus; boiling pans; drying sugar**
D06-E	**Cutting, sorting and packing of sugar, sugar lumps**
D06-F	**Extraction of sugar from molasses**
D06-G	**Other sugars**
D06-H	**Polysaccharides general**
D06-H01	**. Starch and derivatives, dextran** **1986**
D06-H02	**. Cyclodextrin** **1986**

D07 SKINS, HIDES, PELTS, LEATHER, TOBACCO

D07-A **Mechanical treatment of skins, hides, leather and pelts**
Including cutting, stretching.

D07-B **Chemical treatment of skins, hides, leather and pelts**
Including dyeing, chemical dehairing and defatting.

D07-C **Tobacco preparation and processing**

D07-D **Chemical features or treatment of tobacco**
Including filter tips, removal of nicotine, tobacco extracts.

D08 COSMETICS, DENTAL, TOILET PREPARATIONS

D08-A **DENTAL PREPARATIONS (GENERAL AND OTHERS)**

D08-A01 **Fillings**
1986

D08-A02 **Adhesives and cements**
1986

D08-A03 **Artificial teeth, dentures, crowns, fixing devices for dentures, moulding devices**
Excluding cements and adhesives.
1986

D08-A04 **Dental instruments, saliva pumps, syringes**
1986

D08-A04A **. Dental cleaning device**
2011

D08-A05 **Anticaries compositions**
1986

D08-A06 **Dental plaster and dental impression devices**
1986

D08-B **COSMETIC PREPARATIONS (GENERAL AND OTHERS)**

D08-B01 **Make-up (and removing); luminescent pastes**

D08-B01A **. Eye make-up**
e.g. eye shadow, eyeliner, mascara etc.
2005

D08-B01B **. Lip products**
e.g. lipsticks, lip gloss, lip liners etc.
2005

D08-B01C **. Make-up**
e.g. foundations and blushers.
2005

D08-B01D **. Other make-up (and removing); luminescent pastes**
2005

D08-B01D1 **.. Skin whitening agent**
2007
Previous code(s): D08-B01D

D08-B01D2 **.. Skin darkening, fake tan**
Topically applied only. Ingested melanogenesis stimulants code in section B.
2025

D08-B01E **. Make-up removing**
Includes removal of fake tan. Nail polish removers code D08-B02B.
2025

D08-B02 **Nail care general**
Only use this code if the description given in the patent is too vague to apply any of the more specific ones given below.

D08-B02A **. Nail polishes**
Include thickeners, hardeners and bonding agents used in nail polish.
2011

D08-B02B **. Nail polish removers**
2011

D08-B02C **. Artificial nails**
Include extended and fashion nails such as acrylic nails, sculptured nails and gelled nails.
2011

D08-B03 **Care of hair (or promoting growth)**

D08-B03A **. Products for promoting growth**
2005

D08-B03B **. Hair conditioner**
2 in 1 shampoo and conditioners code here and also in D08-B04.
2005

D08-B03C **. Other care of hair**
2005

D08-B04 **Rinsing the hair, shampoo**

D08-B05 **Waving, straightening, fixing hair**

D08-B06 **Dyeing, bleaching hair**

D08-B07 **Depilatories, soapless shaving preparations**

D08-B08 **Cleaning the teeth or mouth general**

D08-B08A **. Toothpaste**
2002

D08-B08B **. Mouthwash**
Tooth cleaning composition in the form of a solution or emulsion designed to be used as a mouth wash.
2002

D08-B08C **. Gels**
2005

D08-B08D **. Strips**
2005

D08-B08E **. Floss**
Includes dental tape.
2005

D08-B09 **Care of the skin, anti-perspirants, astringents general**
1971

D08-B09A **. Skin care general**
1986

D08-B09A1 **.. Skin care**
2002

D08-B09A1A **... Liquid skin care formulation**
2007
Previous code(s): D09-B09A1

D08-B09A1B **... Solid skin care formulation**
2007
Previous code(s): D09-B09A1

D08-B09A2 **.. Personal face and body wash**
2002

D08-B09A2A **... Liquid personal face and body wash**
2007
Previous code(s): D09-B09A2

D08-B09A2B **... Solid personal face and body wash**
2007
Previous code(s): D09-B09A2

D08-B09A3 **.. Anti-ageing preparations**
2002

D08-B09B **. Antiperspirant deodorants**
From 2005, this code has been expanded to cover both antiperspirants and deodorants.
1986

D08-B09B1 **.. Deodorant only**
2005

D08-B09B2 **.. Antiperspirant only**
2005

D08-B10 **Carriers or bases for cosmetics**
1986

D08-B11 **Antioxidants and stabilisers**
1986

D08-B12 **Perfume for cosmetics**
D10-A05 may also be searched.
1986

D08-B13 **Surfactants for cosmetics, excluding hair washing compositions, soap and mouth and dental preparations**
1986

D08-B14 **Whitening teeth only**
For whitening chewing gum use this code and D03-E09.
2005

D08-B14A **. Toothpaste**
Includes tooth powder.
2005

D08-B14B **. Mouthwash**
2005

D08-B14C **. Gels**
2005

D08-B14D **. Strips**
2005

D08-B15 **Cellulite treatment**
2005

D08-B16 **Environmentally friendly cosmetic composition**
2026

D08-B **General and others**

D08-C **ANIMAL USE**
Used for novelties where a code from D08-A and/or D08-B applies but solely for use with animals.
2005

D09 STERILISING AND DISINFECTING, BANDAGES AND DRESSINGS

D09-A **DISINFECTION OR STERILISATION OTHER THAN OF FOOD OR AIR**
Including preservation of bodies and their parts e.g. vital organs, cornea, semen, embryos.

D09-A01 **Chemical methods**
1971

D09-A01A **. Oxidising agents (including peroxides) halogens, halogen-generators (chlorisocyanurates) heavy metal compounds; other inorganics**
1977

D09-A01B **. Phenolic compounds (including precursors such as esters); quaternary ammonium compounds (optionally cyclic); amine oxides, tropolones; sulfonium**
1977

D09-A01C **. Antibiotics; other heterocyclics**
Including ethylene oxide.
1977

D09-A02 **Physical method**
1971

D09-A02A **. By irradiation**
e.g. UV.
2011

D09-A02B **. By heating**
2011

D09-A02C **. By electrochemical methods**
Disinfection by electrochemical methods.
2023

D09-A03 **Preservation of biological specimens and tissue**
2005

D09-A03A **. Preservation of organs, other body tissues**
2011

D09-A03B **. Preservation of plant tissues**
e.g. flowers.
2011

D09-A **General and others.**

D09-B **DISINFECTION AND STERILISATION OF AIR**
Including purifying, deodorising and killing insects.

D09-B **General**

D09-B01 **Deodorising/sterilising devices general**
Apply codes from this section only if the device is claimed. May be used in conjunction with other D09-B codes if necessary.
2005

D09-B01A . **Using heating elements**
e.g. vaporisers, evaporators and plug-ins.
2005

D09-B01B . **Using sprayers/atomisers**
e.g. aerosols, pumps and misting devices.
2005

D09-B01C . **Passive means**
Spreading a substance by convection or sachets.
2005

D09-B02 **Candles used in disinfection / deodorisation of air**
2005

D09-B03 **Creation of aseptic environment**
Used for processes and apparatus designed to create a sterile atmosphere within a room, especially an operating theatre or food preparation plant.
2005

D09-B04 **Perfuming of air (masking)**
2005

D09-B05 **Neutralising odour causing substances**
e.g. cat litter.
2005

D09-B06 **Killing/controlling insects (in a room)**
2005

D09-B07 **By irradiation**
2011

D09-C **BANDAGES, DRESSINGS**

D09-C01 **Prostheses, implants**
Prior to 2010 this code did not cover implants. From 2010, D09-C01F has been introduced to cover implants, hence the addition of implants to the general D09-C01 code. Excludes dentures, false nails, eyelashes and wigs.
1972

D09-C01A . **Lenses**
1986

D09-C01B . **Blood vessels**
1986

D09-C01C . **Organs, heart, heart valves, pancreas**
1986

D09-C01D . **Artificial joints and limbs, artificial bone, tendons**
Includes bone adhesive, bone cement.
1986

D09-C01E . **Tissue engineering scaffold**
Includes all processes and chemicals used in the production of the scaffolds.
2007
Previous code(s): D09-C

D09-C01F . **Catheters, stents, implants**
2010

D09-C02 **Catamenial devices with special shape**
Including production.
1972

D09-C02A . **Tampons**
2005

D09-C02B . **Other sanitary products**
E.g. sanitary napkins.
2005

D09-C03 **Baby nappy**
Disposable diaper.
1972

D09-C04 **Others with special shape**
Including production general.
1972

D09-C04A . **Cataplasms, poultices (for applying heat to a body part)**
1986

D09-C04B . **Adhesive plasters, bandages, wound dressings**
1986

D09-C04C . **Splints (external)**
For internal see D09-C01.
1986

D09-C04D . **Surgical gowns, protective clothing**
1986

D09-C04E . **Adult incontinence pads**
2005

D09-C05 **Water repellent materials for use as above**
1972

D09-C06 **Water absorbent materials for use as above**
1972

D09-C **General and others**

D09-D **SURGICAL SUTURE MATERIALS**

D09-D **General**

D09-E	**CHEMICAL PROTECTION OF SKIN**
D09-E	**General** e.g. chemical agents brought into direct contact with the skin of living human or animal bodies to afford protection against external influences (sunlight, X or other active rays, corrosive liquids or solids, bacteria, insect stings. Includes barrier creams).
D09-E01	**Sunscreen** **2002**
D09-E02	**Insect repellents** **2002**
D09-E03	**Barrier creams** Applied to skin to create physical barrier between skin and substances which may cause skin irritation, e.g. caustic chemicals. **2002**

D10 ANIMAL AND VEGETABLE OILS

D10-A	**OILS AND FATS, PERFUMES**
D10-A01	**Fats or oils production from raw materials**
D10-A02	**Refining fats or oils**
D10-A03	**Preserving by use of additives**
D10-A04	**Separation of mixtures into constituents** e.g. saturated from unsaturated oils.
D10-A05	**Essential oils, perfumes general**
D10-A05A	**. Essential oils** **1986**
D10-A05B	**. Perfume compositions for rooms** e.g. stone impregnated with perfume with sustained release effect. **1986**
D10-A05C	**. Perfumes other than above** **1986**
D10-A06	**Compositions containing oils and fat** **1971**
D10-A	**General and others** Except D03-C and D10-B03.
D10-B	**FATTY ACIDS, CANDLES**
D10-B01	**Fatty acids preparation from fats, oils or waxes; refining**
D10-B02	**Chemical modification of fats, oils, fatty acids**
D10-B03	**Candles**
D10-B04	**Compositions containing fatty acids** Except D11-C. **1971**
D10-B	**Unclassified**

D11 DETERGENTS, SOAP, GLYCEROL

D11-A **SURFACE ACTIVE NON-SOAP DETERGENTS**

D11-A01 **Anionic compounds**

D11-A01A **. Carboxylic acids, salts and substituted derivatives**
Except soap.
1972

D11-A01A1 **.. Contains free carboxylic acid group(s)**
1986

D11-A01A2 **.. Contains carboxylic acid ester group(s), but no free carboxylic acid groups**
1986

D11-A01A3 **.. Contains carboxylic amide group(s) but no carboxylic acid or ester group**
1986

D11-A01B **. Sulfonic acids and esters**
1972

D11-A01B1 **.. Aryl sulfonic acid**
Sulfonic acid group linked via the sulfur atom to the aromatic ring.
1986

D11-A01B2 **.. Aliphatic sulfonic acid**
Sulfonic acid group linked via the sulfur atom to the aliphatic chain
1986

D11-A01C **. Lignin sulfonates and derivatives**
1972

D11-A01D **. Protein hydrolysates, fatty acid condensates thereof**
1972

D11-A01E **. Derivatives of acids of P**
1972

D11-A01F **. Sulfate esters**
1972

D11-A01F1 **.. Unsubstituted alkyl sulfates**
1986

D11-A01F2 **.. (Poly)ethoxylated sulfates with one or more ethyleneoxy groups**
1986

D11-A02 **Cationic compounds**

D11-A02A **. Heterocyclic quaternary ammonium with N+ in ring**
1986

D11-A02B **. Quaternary ammonium not in heterocyclic ring**
1986

D11-A02B1 **.. Containing amide group**
1986

D11-A02B2 **.. Containing ether or OH groups**
Excluding D11-A02B1.
1986

D11-A03 **Non-ionic compounds**

D11-A03A **. Polyalkylene oxides**
1986

D11-A03A1 **.. Polyalkylene glycol ethers with higher alcohols and cycloalkanols**
1986

D11-A03A2 **.. Polyalkylene glycol ethers with phenols**
1986

D11-A03A3 **.. Polyalkylene glycol ethers with polyols**
e.g. glycerol, sorbitan.
1986

D11-A03A4 **.. Polyalkylene glycol esters with higher carboxylic acids**
1986

D11-A03A5 **.. Polyalkylene glycol ethers with substituted alkanols**
e.g. long chain amides of monoethanolamine.
1986

D11-A03B **. Glycosides (as surfactants)**
1994
Previous code(s): D11-A03

D11-A04 **Ampholytes, electroneutral compounds**

D11-A04A **. Containing quaternary ammonium group(s) and sulfonate group(s)**
1986

D11-A04B **. Containing quaternary ammonium group(s) and carboxy group(s) but no sulfonate group(s)**
1986

D11-A04C **. Amine oxide type compounds**
2005

D11-A05 **Anionic and anionic mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A06 **Anionic and cationic mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A07 **Anionic and non-ionic mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A08 **Cationic and cationic mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A09 **Cationic and non-ionic mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A10 **Non-ionic and non-ionic mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A11 **Anionic, cationic and non-ionic mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A12 **Ampholytes and anionic and/or cationic and/or non-ionic detergent mixtures**
From 197701 also search D11-A01: to D11-A04:
1972

D11-A **Detergents and their mixtures - general**

D11-B **NON SURFACE ACTIVE DETERGENT ADDITIVES**
This code is only applied if five or more of the D11-B sub-codes would be applicable.

D11-B01 **Bleaching agents; optical brighteners**
1971

D11-B01A . **Organic bleaches**
e.g. peroxy-carboxylic acids.

D11-B01B . **Inorganic bleaches**
e.g. hydrogen peroxide, hypochlorite.

D11-B01C . **Optical brighteners, anti-greying agents, blueing agents**

D11-B01D . **Bleach activators and catalysts**
1994
Previous code(s): D11-B01

D11-B01D1 .. **Bleach activators**
Includes acyloxybenzene sulfonates, acyloxybenzoic acid, N-acyl lactams and tetraacetylethylenediamine.
2005

D11-B01D2 .. **Bleach catalysts**
Includes various transition metal complexes and free radical generators such as azobisisobutyronitrile.
2005

D11-B01D3 .. **Enzymatic bleaches**
Bleach compositions that use an enzyme as the active ingredient.
2005

D11-B01E . **Bleach boosters**
Compounds added to bleach compositions which are not themselves bleaches but which do increase bleaching power of the composition.
2005

D11-B02 **Enzyme additives**
The detergent composition comprises enzymes, e.g. proteases.
1972

D11-B03 **Builders**
1972

D11-B04 **Anticaking agents and soil suspending agents**
1972

D11-B05 **Antitarnishing agents**
1972

D11-B06 **Sequestering agents**
1972

D11-B07 **Foam promoters**
1972

D11-B08 **Foam inhibitors**
1972

D11-B09 **Abrasives**
1972

D11-B10 **Carbohydrates, starch and cellulose derivatives**
1972

D11-B11 **Silicates, carbonates, alkali, silicones, siloxanes**
1972

D11-B11A . **Inorganic silicates**
Including clays and zeolites.
2005

D11-B11B . **Organic silicon compounds general**
2005

D11-B11B1 .. **Reactive silicon compounds**
Includes silazanes.
2005

D11-B11B2 .. **Inert silicon compound**
Includes silicones and siloxanes unless they have pendant reactive groups.
2005

D11-B11C . **Inorganic carbonates**

D11-B11D . **Alkalis**
2005

D11-B12 **Stabilisers (various)**
1972

D11-B13 **Acids**
1972

D11-B14 **Antimicrobial agents**
1972

D11-B15 **Fabric softeners and conditioners**
Do not also search D11-D07.
1972

D11-B15A . **Concentrated form**

D11-B15B . **Other liquid fabric softeners and conditioners**

D11-B15C . **Other special forms of softeners and conditioners**

D11-B16 **Solubilisers (solvents, hydrotopes)**
1977

D11-B17 **Organic non-polymeric sulfur containing compound**

D11-B18 **Organic non-polymeric phosphorus containing compounds**

D11-B19 **Organic polymers**
Excluding polysaccharides (D11-B10) and polysiloxanes (D11-B11).

D11-B20 **Inorganic nitrogen containing compound**

D11-B21 **Inorganic phosphorus containing compound**

D11-B22 **Other inorganic additives**
Excluding D11-B11.

D11-B23 **Perfume or odourant for detergents**

D11-B24 **Thickeners**
Substances added to a detergent composition in order to increase its viscosity. If a specific type of thickener is used also apply the appropriate D11-B structural code (e.g. if cellulose is used as the thickener add D11-B10).
2005

D11-B **General and others**

D11-C **SOAP DETERGENT COMPOSITIONS**

D11-C01 **Use general**

D11-C01A . **Soap bars**

D11-C01B . **Soap powders**

D11-C01C . **Liquid soaps**

D11-C02 **Soap compositions without special shape and without non-soap detergents**

D11-C03 **Soap with non-soap detergents**

D11-C **Soap detergent compositions**

D11-D **SPECIAL METHODS OR DETERGENT MATERIALS**

D11-D01 **Detergent compositions with special uses**
1971

D11-D01A . **Dishwashing, bottle and utensil washing**
Including china, glass and plastic.
1986

D11-D01B . **Heavy duty hard surface cleaner**
e.g. paintwork, plastic surfaces, baths (excluding plastic baths), walls, tiles, stone, machinery, surgical instruments, cars, aircraft, boilers, ships and metal articles.
1986

D11-D01B1 .. **Oven cleaners**
2005

D11-D01B2 .. **Flux removers**
2005

D11-D01B3 .. **Other abrasive type household surface cleaners**
2005

D11-D01B4 .. **Other bleach based household surface cleaners**
2005

D11-D01B5 .. **Other household surface cleaners**
2005

D11-D01B6 .. **Other industrial hard surface cleaners**
2005

D11-D01C . **Glass or window cleaner, (contact) lens cleaners**
1986

D11-D01D . **Lavatory cleaner**
Includes toilet cleaner.
1986

D11-D01E . **Drain or sink cleaner**
For unblocking sewer pipes or helping to prevent the occurrence of clogged drains.
1986

D11-D01F . **Detergents effective at low temperatures**
1986

D11-D01G . **Detergents effective at high temperatures**
1986

D11-D01H . **Laundry compositions**
2005

D11-D01J . **Personal care compositions**
2005

D11-D01K . **Leather and suede cleaning**
Does not include dehairing, defatting or dyeing of leather, which are coded in D07.
2026

D11-D02 **Detergent compositions with special shape or colour**
1971

D11-D02A . **Tablet or other moulded article**
2005

D11-D02B . **Capsule**
Includes microcapsules.
2005

D11-D02C . **Sprays**
2005

D11-D02D . **Other detergent compositions with special shape or colour**
2005

D11-D03 **Powders, flakes and granules production**
1972

D11-D04 **Pastes, gels and scouring composition production**
1972

D11-D05 **Sulfonation processes for preparing detergents**
1971

D11-D06 **Biodegradable detergents**
1972

D11-D07 **Liquid detergent compositions**
1977

D11-D07A . **Heavy duty laundry detergents**
For use in automatic washing machines.
2005

D11-D07B . **Light duty liquid laundry detergents**
For use in hand washing of clothes.
2005

D11-D07C . **Liquid laundry detergents with special use**
2005

D11-D07C1 .. **Colour care**
2005

D11-D07C2 .. **Combined detergent / fabric softener**
2005

D11-D07C3 .. **Liquid laundry detergents with bleach (stain removers)**
2005

D11-D07D . **Liquid dishwashing detergents**
2005

D11-D07E . **Automatic dishwashing rinse aids**
2005

D11-D07F . **Liquid soap type (hand washing compositions)**
2005

D11-D07G . **Others liquid detergent compositions**
2005

D11-D08 **Granular laundry detergent compositions**
Use when the actual composition rather than its means of manufacture is claimed.
2005

D11-D **General and others**

D11-E **SOAP-MAKING, GLYCEROL**

D11-E01 **Resin soaps from naphthenic acids**

D11-E02 **Glycerol recovery from saponfication liquor**
For refining see E10-E04+.

D11-F **DETERGENTS WITHOUT TENSIDES**

D11-F **General**

E:
GENERAL CHEMICALS

E01 Steroid
E02 Antibiotic
E03 Vitamin
E04 Other Natural Materials
E05 Miscellaneous Organic
E06 Heterocyclic Fused Rings
E07 Heterocyclic, Mononuclear
E08 Aromatic, Polycarbocyclic
E09 Alicyclic, Polycarbocyclic
E10 Aromatic and Cyclo Aliphatic (Mono and Bicyclic only), Aliphatic
E11 Processes, Apparatus
E12 Physical Form
E21 Azo Dyes
E22 Anthraquinone Dyes
E23 Phthalocyanine (Macrocyclic) Dyes
E24 Special Class of Dye
E25 General and Other Dyes
E26 Dye Precursors excluding E21-E, E24-B
E27 Dye Formulations; Morphology
E31 Non-metallic Elements, Metalloids and Compounds
E32 Ammonia, Cyanogen and Compounds
E33 Alkali Metal Compounds
E34 Compounds of Be, Mg, Al, Ca, Sr, Ba, Ra, Th, Rare Earth
E35 Compounds of Other Metals

E: GENERAL CHEMICALS

General Chemical manual codes have been divided into four main sections:-

E01-E11: Organic chemistry (**E1**)

E12: Physical form

E21-E27: Organic Dyes, Pigments (**E2**)

E31-E35: Inorganic Chemistry (**E3**)

A compound is generally classified in only one of sections (E1), (E2) or (E3), except that:

a organic complexes or salts having an important inorganic component are also coded in section (E3) with the addition of codes E05-S or E05-T, and

b E26 compounds which are not themselves dyes are also coded in section (E1).

c. E12 codes are applied in addition to E1 or E3 codes. Compounds classified in E2 have their own physical form manual codes (see E27-B Morphology).

Coding rules

1. For **organic salts and complexes** containing more than one essential specific component, each component (e.g. anion and cation of a salt) is coded separately.
2. **Production** is used to cover new compounds, purification, isolation, storage and chemical processes for producing a known compound and chemical processes where the end-product is a mixture of compounds.
3. **Use** covers all other inventive features, e.g. compositions, physical processes for producing mixtures, and detection, testing and removal of compounds.
4. **Inorganic carbon compounds**: The following compounds (including those where S-atoms are replaced by Se or Te) are coded as inorganic:- carbides, graphite compounds, CO, metal carbonyls (see metal), CO2, COS, CS2, COX2, CSX2 (where X are same or different halogens), metal salts of (thio)carbonic or of (thio) carbamic acid*, (thio)-cyanogen, cyanamide*, HCN, HCNO, HCNS, (thio)-cyanogen halides and fulminates. Please note other carbon oxides are coded as organic, as are (thio)ureas and dicyandiamides.

   *For some (early) references, these compounds have been coded as organic.

5. **Enol-keto (thiol-thiono) tautomers** and their derivatives (e.g. oximes but not phenols) are always coded as keto (thiono) structures and **amino-imino tautomers** are always coded as amino structures; the rules are the same as for the fragmentation code.

Note

1. Where a code refers to the number of groups present, this refers to the molecule (or ion) as a whole, unless stated otherwise.
2. When a specific code is searched, the corresponding generic code(s) (used for general disclosures which would otherwise require several specific codes) must also be searched for complete coverage.

Section E codes commenced at 197001.

E01-E11 ORGANIC CHEMISTRY (E1)

In section (E1) a single compound is normally assigned just one code in order of priority:-

E01 > E05 > E06 > E07 > E08 > E09 > E10

Within each of the basic groups E05*, E06 and E07 codes for all essential elements or rings are applied whereas in E08, E09 and E10 only one code is applied.

*From 199401 the inclusion of fullerenes within section E05 has resulted in an alteration to this rule; codes for all essential elements in a heterofullerene are **not applied** - they receive code E05-U01 only. e.g. Hf in C60 codes E05-U01 only, **not** E05-N, E05-U01.

Note

1. E02, E03 and E04 are very rarely used because, for known structures, only the chemical structure codes are applied.
2. Codes from E11 are applied where there is insufficient (chemical) information and to highlight general and analytical processes.

E01 STEROID

Includes all compounds containing a cyclopenta(a) phenanthrene ring system, optionally fused with other rings; **not** coded elsewhere unless additionally as dyes.

E01	**GENERAL**
E01-P	**Steroid - production** Used for any specified method of producing steroids. **2010**
E01-U	**Steroid - use** Used for any specified use of steroids **2010**

E02 ANTIBIOTIC

Antibiotic with unknown structure.

E02	**GENERAL**

E03 VITAMIN

Vitamin with unknown structure.

E03	**GENERAL**

E04 OTHER NATURAL MATERIALS

E04-A	**ALKALOID, PLANT EXTRACT** Alkaloid, plant extract with unknown structure.
E04-B	**ANIMAL EXTRACT, MICROBIOLOGICAL** Animal extract, microbiological with unknown structure.
E04-C	**SUGAR OF UNKNOWN CONSTITUTION; OTHER NATURAL PRODUCT** Sugar of unknown constitution; other natural product with unknown structure.

E05 MISCELLANEOUS ORGANIC

This section contains:

- all organic compounds containing elements other than H, C, N, O, S, and halogen
- all compounds containing specific isotopes
- all radioactive organic and inorganic compounds
- all compounds containing halogen as hetero-ring member
- all fullerene type cage structures (from 199401)
- all organics containing inorganic ligand as essential component; the latter is coded in section (**E3**) and E05-S or E05-T if appropriate.

Note

1. Organic compounds containing metals are coded in E05 only if the metal either:- (a) forms an important limiting factor of the invention or (b) is attached to organic C-atom or (c) is radioactive or contains a specific isotope. Thus metal salts of organic acids are generally coded only in E05, but for alkali(ne earth) or Al salts see first the code for the acid, then E05-A or E05-B. These latter codes are used only if the metal is the limiting factor.
2. From 199401, fullerene type cage structures have been included in this section commencing at code E05-U. Previously, these compounds had been coded in section (**E3**), i.e. E31-N+ for carbon only fullerenes (e.g. Buckminsterfullerene). For fullerenes containing heteroatom(s) of greater priority than carbon, relevant codes corresponding to that atom had been applied.

E05-A	**ALKALI METAL**
E05-A	**Lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs) - general**
E05-A01	**Lithium (Li) compounds** Organo Lithium compound. **2005**
E05-A02	**Sodium (Na), potassium (K), cesium (Cs), rubidium (Rb) compounds** Organo compounds of Na, K, Cs and/ or Rb. **2005**

E05-B **ALKALI EARTH METAL, ALUMINIUM (AL)**

E05-B **General**

E05-B01 **Beryllium (Be), magnesium (Mg), calcium (Ca), strontium (Sr), barium (Ba)**
1975

E05-B02 **Compound having aluminium-C (Al-C) bond**
1975

E05-B03 **Other aluminium (Al) compound**
1975

E05-C **BORON**

E05-C **General**

E05-C01 **Boron (B) in a ring**
1994
Previous code(s): E05-C

E05-C02 **Other boron (B) compound**
1994
Previous code(s): E05-C

E05-D **PERIODIC GROUP IIIB**
Excluding B, Al.

E05-D **Gallium (Ga), indium (In), thallium (Tl) - general**

E05-E **SILICON**
In order of priority:
E05-E01 > E05-E02 > E05-E03.

E05-E **General**

E05-E01 **Heterocyclic or aromatic with Si-C bond**

E05-E01A . **Si as part of a ring**
2005

E05-E01B . **Heterocyclic compound with Si-C bond**
2005

E05-E01C . **Aromatic compound with Si-C bond**
2005

E05-E02 **(Cyclo)aliphatic with Si-C bond - general**
1975

E05-E02A . **4 Si-C bonds to one Si**
1986

E05-E02B . **3 Si-C bonds to one Si**
1986

E05-E02C . **2 Si-C bonds to one Si**
1986

E05-E02D . **1 Si-C bond to one Si**
1986

E05-E03 **Other organo-silicon compound**

E05-E03A . **O-Si bonds only**
Compound containing O-Si bonds only. Used for tetrahydrocarbyloxysilanes and hydrocarbylsilicates.
2005

E05-E03B . **Other silicon compounds**
2005

E05-F **PERIODIC GROUP IVB**
Excluding C, Si.

E05-F **Germanium (Ge), tin (Sn), lead (Pb) - general**

E05-F01 **Compound with tin-C (Sn-C) bond**
1975

E05-F02 **Other compound of germanium (Ge), tin (Sn), lead (Pb)**

E05-F02A . **Germanium (Ge) compound**
Organogermanium compound.
2005

E05-F02B . **Other tin (Sn) compound**
Organotin compound not containing Sn-C bond(s).
2005

E05-F02C . **Lead (Pb) compound**
Organolead compound.
2005

E05-G **PHOSPHORUS**
In order of priority**:** E05-G01 > E05-G02...

E05-G **General**

E05-G01 **P-C bond, heterocyclic compound**

E05-G02 **P-C bond, aromatic compound**

E05-G03 **P-C bond, aliphatic or alicyclic compound - general**

E05-G03A . **phosphonium; or with P-C multiple bond, P-hal or P-N**
1975

E05-G03B . **with 3-valent P (and addition complexes)**
1975

E05-G03C . **with 5-valent P and >1 P-C bonds**
1975

E05-G03D . **with 5-valent P and 1 P-C bond**
1975

E05-G04 **P-N bond, heterocyclic compound**

E05-G05 **P-N bond, aromatic compound**

E05-G06 **P-N bond, aliphatic or alicyclic compound**

E05-G07 **P-O or P-S bond, heterocyclic compound**

E05-G08	**P-O or P-S bond, aromatic compound**
E05-G09	**P-O or P-S bond, aliphatic or alicyclic compound - general**
E05-G09A	**. with P-hal, P-S or >1 P** 1975
E05-G09B	**. with 3-valent P or tautomeric 3-5 valent P** 1975
E05-G09C	**. mono, di or tri-unsubstituted alkyl orthophosphate (or salt)** 1975
E05-G09D	**. other 5-valent P compound** 1975
E05-H	**ARSENIC**
E05-H	**General**
E05-J	**ANTIMONY, BISMUTH**
E05-J	**General**
E05-K	**SELENIUM (SE), TELLURIUM (TE), NOBLE GAS, HALOGEN IN RING** Excluding At, Rn, E05-Q.
E05-K	**General**
E05-L	**1ST TRANSITION SERIES**
E05-L	**General**
E05-L01	**Titanium (Ti) compound**
E05-L02	**Iron (Fe), cobalt (Co), nickel (Ni) compound - general**
E05-L02A	**. Iron (Fe) compound** 1986
E05-L02B	**. Cobalt (Co) compound** 1986
E05-L02C	**. Nickel (Ni) compound** 1986
E05-L03	**Scandium (Sc), vanadium (V), chromium (Cr), manganese (Mn), copper (Cu), zinc (Zn) compound - general**
E05-L03A	**. Scandium (Sc), vanadium (V), chromium (Cr), manganese (Mn) compound** 1975
E05-L03B	**. Copper (Cu) compound** 1975
E05-L03C	**. Zinc (Zn) carboxylate** 1975
E05-L03D	**. Other zinc (Zn) compound** 1975
E05-M	**2ND TRANSITION SERIES**
E05-M	**Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd - general**
E05-M01	**Zirconium (Zr) compound** 2005
E05-M02	**Ruthenium (Ru), rhodium (Rh), palladium (Pd) compound - general** 2005
E05-M02A	**. Ruthenium (Ru) compound** 2005
E05-M02B	**. Rhodium (Rh) compound** 2005
E05-M02C	**. Palladium (Pd) compound** 2005
E05-M03	**Y, Nb, Mo, Tc, Ag, Cd - general** 2005
E05-M03A	**. Niobium (Nb), technetium (Tc), cadmium (Cd) compound** 2005
E05-M03B	**. Silver (Ag) compound** 2005
E05-M03C	**. Molybdenum (Mo) compound** 2005
E05-M03D	**. Yttrium (Y) compound** 2005
E05-N	**3RD TRANSITION SERIES**
E05-N	**Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg - general**
E05-N01	**Hafnium (Hf) compound** 2005
E05-N02	**Os, Ir, Pt - general**
E05-N02A	**. Osmium (Os) compound** 2005
E05-N02B	**. Iridium (Ir) compound** 2005
E05-N02C	**. Platinum (Pt) compound** 2005
E05-N03	**Tantalum (Ta), tungsten (W), rhenium (Re), gold (Au), mercury (Hg) general** 2005
E05-N03A	**. Tantalum (Ta), tungsten (W), rhenium (Re) compound** 2005
E05-N03B	**. Gold (Au) compound** 2005
E05-N03C	**. Mercury (Hg) compound** 2005
E05-P	**LANTHANOIDS (LA-LU)**
E05-P	**General**

E05-Q **PO, AT, RN, FR, RA, ACTINOIDS**

E05-Q **General**

E05-R **RADIOACTIVE ELEMENT OTHER THAN E05-Q, SPECIFIC ISOTOPE**

E05-R **General**

E05-S **INORGANIC LIGAND CONTAINING ONLY H, C, N, O, S OR HALOGEN**

E05-S **General**

E05-T **INORGANIC LIGAND (ION OR COMPLEXING AGENT) OTHER THAN E05-S**

E05-T **General**

E05-U **FULLERENE TYPE CAGE STRUCTURES**
Prior to 199401 fullerene structures had been coded in section (**E3**). Further notes are included under the section E05 heading.
Heterofullerenes receive code E05-U01 only; the heteroatom(s) present are **not** described by additional section E05 codes. e.g. Uranium in C82. Code E05-Q should **not** be added to describe the endohedral uranium atom; only code E05-U01 is required.
1994

E05-U **General**
1994

E05-U01 **Other than carbon only**
Where heteroatom(s) may be endohedral (inside cage), may form part of the cage resulting in a hetero cage structure or may be bound to the outside of the cage, e.g. C60H6, C70F34.
1994

E05-U02 **Carbon only**
e.g. Buckminsterfullerene.
1994

E05-U03 **Carbon nanotubes (general)**
A general code, applied when the nature of nanotube is not specified or if all 3 codes below are relevant.
2010

E05-U03A . **Single walled**
Single walled carbon nanotube.
2010

E05-U03B . **Double walled**
Double walled carbon nanotube.
2010

E05-U03C . **Multiple walled (> 2)**
Multiple walled (> 2) carbon nanotube.
2010

E05-U04 **Heteroatom containing nanotubes**
2005

E05-U05 **Other Carbon nano 3-D structures (general)**
A general code, applied when the nature of the three-dimensional structures is not specified or if 3 or more of the codes below are relevant.
2010

E05-U05A . **Nanoparticles, nanopowder**
Carbon nanoparticles or nanopowder.
2010

E05-U05B . **Nanorods, nanowhiskers**
Carbon nanorods, nanowhiskers or nanofibers.
2010

E05-U05C . **Nanofilm**
Carbon nanofilm including graphene.
2010

E05-U05D . **Other nanoforms (e.g. nanobuds, nanohorns or nanodiamonds)**
Other nanocarbon e.g. nanobuds or nanohorns.
2010

E05-U05E . **Quantum dots**
Nano-graphene quantum dots.
2010

E05-U06 **Other heteroatom-containing nano 3-D structures (general)**
Applied when a heteroatom is present in any three-dimensional structure(s) other than those covered above.
2010

E05-U06A . **Nanoparticles, nanopowders**
Includes heteroatom-contaning carbon nanoparticles or nanopowders.
2026

E05-U06B . **Nanorods, nanowhiskers or nanofibers**
Includes heteroatom-contaning carbon nanorods, nanowhiskers or nanofibers.
2026

E05-U06C . **Nanofilms**
Includes heteroatom-contaning carbon nanofilms.
2026

E05-U06D **. Other nanoforms (e.g. nanobuds, nanohorns or nanodiamonds)**
Includes heteroatom-contaning other nanoforms e.g. nanobuds, nanohorns or nanodiamonds.
2026

E05-U06E **. Quantum dots**
Includes heteroatom-contaning nanocarbon quantum dots.
2026

E05-U07 **Nanostructures of other organic compounds**
Nanostructures of organic compounds other than compounds coded in E05-U above.
2010

E05-V **METALLOCENES**
2005

E05-V **General metallocene**
Also apply all other E05 codes.
2005

E05-V01 **Unbridged metallocene with 2-4 pi-arene ligands**
2005

E05-V02 **Bridged carbocyclic metallocenes**
2005

E05-V03 **Carbocyclic metallocene with only 1 pi-arene ligand**
2005

E05-V04 **Metallocene with heteroatom-containing rings**
2005

E05-V05 **Condensed carbocyclic metallocenes**
2005

E05-W **GENERAL ORGANOMETALLIC COMPLEX**
2010

E05-W **Organometallic complex (general)**
Applied to cover an organometallic complex when the metal is not specified; or when 5 or more of the following general metal codes can be applied. E05-A, E05-B, E05-D, E05-F, E05-H, E05-J, E05 L, E05-M, E05-N, E05-P, E05-Q, E05-R.
2010

E05-Y **METAL-ORGANIC FRAMEWORK**
Metal organic framework / MOFs.
2021

E06 HETEROCYCLIC, FUSED RING

The specific compounds listed include all reduced derivatives and tautomers, unless specifically excluded.

Note

1. For systems containing ring elements other than C, O, S and N see E05.
2. Specific ring systems present in a compound are each coded.
3. If there is an essential fused hetero-ring and (optionally) another variable fused hetero-ring, only the essential ring is coded and not the variable ring nor E06-H.

E06-A **SOLE HETERO(S) OXYGEN**

E06-A **Oxygen-containing fused heterocyclic - general**
2005

E06-A01 **1-Benzo-(furan or pyran)**

E06-A02 **Others with 2 rings - general**

E06-A02A **. Phthalic anhydride (derivative)**
1986

E06-A02B **. Phthalide (derivative)**
1986

E06-A02C **. Other isobenzofuran; isochromene**
1986

E06-A02D **. Other with one O**
1986

E06-A02E **. Rings with 2 or more O**
1986

E06-A03 **With more than 2 rings - general**
Applied if no specific information is available.

E06-A03A **. Cyclodextrins**
Includes all types of cyclodextrin.
2011

E06-A03B **. Other heterocyclic, fused ring with more than 2 rings**
2011

E06-B **SOLE HETERO(S) SULPHUR**

E06-B01 **With 2 rings**

E06-B02 **With more than 2 rings**

E06-C **SOLE HETEROS O AND S**

E06-C **General**

E06-D **SOLE HETERO(S) NITROGEN**

E06-D01 **Indole**

E06-D02	**Quinoline**
E06-D03	**Isoindole or Isoquinoline** Isoindole or Isoquinoline and its derivatives.
E06-D04	**Others with 2 rings and one N**
E06-D05	**With 2 rings (5+6 membered) and two N**
E06-D06	**With 2 rings (both 6 membered) and two N**
E06-D07	**Others with 2 rings and two N**
E06-D08	**With 2 rings and three N** Including benzotriazole.
E06-D09	**With 2 rings and four N**
E06-D10	**With 2 rings and > four N**
E06-D11	**Acridine**
E06-D12	**Dibenzo[b,f]azepine**
E06-D13	**Others with 3 rings and one N**
E06-D14	**Phenazine**
E06-D15	**Carbolines; phenanthrolines** i.e. benzo-1,2:3,4-dipyridines.
E06-D16	**Others with 3 rings and two N**
E06-D17	**With 3 rings and > two N**
E06-D18	**With more than 3 rings**
E06-D	**General** **1994**
E06-E	**SOLE HETEROS O AND N**
E06-E01	**Benzoxazole, benzisoxazoles**
E06-E02	**Benzoxazines**
E06-E03	**Others with 2 rings**
E06-E04	**Phenoxazine**
E06-E05	**Others with more than 2 rings**
E06-F	**SOLE HETEROS S AND N**
E06-F01	**Benzothiazole, benzisothiazoles**
E06-F02	**Benzothiazines**
E06-F03	**Others with 2 rings**
E06-F04	**Phenothiazine**
E06-F05	**Others with more than 2 rings**
E06-G	**SOLE HETEROS O AND S AND N**
E06-G	**General**
E06-H	**FUSED RING - GENERAL**
E06-H	**General** This code is used for general disclosures when no specific hetero-ring system is present or when many are present.
E06-S	**SPIROFUSED FUSED HETEROCYCLES** To be applied in conjunction with specific ring code(s) from E06-A to E06-G. **2021**

E07 HETEROCYCLIC, MONONUCLEAR

The specific compounds listed include all reduced derivatives and tautomers, unless specifically excluded.

Note

1. For systems containing ring elements other than C, O, S and N see E05.
2. Specific ring systems in a compound are each coded, except that an E07 ring is not coded if an E06 system is present in the same compound.
3. If there is an essential mono hetero-ring and (optionally) another variable mono hetero-ring, only the essential ring is coded, and not the variable ring nor E07-H.

E07-A	**SOLE HETERO(S) OXYGEN**
E07-A	**Oxygen-containing monoheterocyclic - general** **2005**
E07-A01	**Furan excluding tetrahydrofuran**
E07-A02	**Tetrahydro-(furan or pyran) - general**
E07-A02A	**. Tetrahydrofuran and tetrahydropyran** **1986**
E07-A02B	**. Tetrahydrofuran with =O & -O- substituents** **1986**
E07-A02C	**. Tetrahydrofuran with =O, no -O- substituents** **1986**
E07-A02D	**. Tetrahydrofuran with no =O, with -O- substituents** **1986**
E07-A02E	**. Tetrahydrofuran with no =O, no -O-substituents** **1986**
E07-A02F	**. Tetrahydropyran with =O & -O- substituents** **1986**
E07-A02G	**. Tetrahydropyran with =O, no -O- substituents** **1986**
E07-A02H	**. Tetrahydropyran with no =O, with -O- substituents** **1986**
E07-A02J	**. Tetrahydropyran with no =O, no -O-substituents** **1986**
E07-A03	**Other ring with one O – general**
E07-A03A	**. Oxiran from (halo)hydrocarbon** **1975**
E07-A03B	**. Other oxiran** **1975**
E07-A03C	**. Others with one O** e.g. (dihydro)pyran. **1975**
E07-A04	**Ring with more than one O**
E07-B	**SOLE HETERO(S) SULPHUR**
E07-B01	**Thiophene**
E07-B02	**Others with one S**
E07-B03	**Others with more than one S**
E07-C	**SOLE HETEROS O AND S**
E07-C	**General**
E07-D	**SOLE HETERO(S) NITROGEN**
E07-D	**General** **1994**
E07-D01	**With one N, < 5 membered**
E07-D02	**Pyrrole, excluding pyrrolidine**
E07-D03	**Pyrrolidine**
E07-D04	**Pyridine, excluding piperidine - general**
E07-D04A	**. (Hydro)pyridinium, N(V)** N(V) e.g. for N-oxide. **1986**
E07-D04B	**. Pyridine production** **1986**
E07-D04C	**. Pyridine use** **1986**
E07-D04D	**. Di-, tetra-hydropyridine** **1986**
E07-D05	**Piperidine**
E07-D06	**With one N, > 6 membered**
E07-D07	**With > one N, < 5 membered**
E07-D08	**Pyrazole**
E07-D09	**Imidazole - general**
E07-D09A	**. (Hydro)imidazolium, N(V)** N(V) e.g. for N-oxide. **1986**
E07-D09B	**. Imidazole** **1986**
E07-D09C	**. Dihydroimidazole** **1986**
E07-D09D	**. Tetrahydroimidazole** **1986**

E07-D10	**Pyr(id)azine, excluding piperazine**
E07-D11	**Piperazine**
E07-D12	**Pyrimidine**
E07-D13	**Others with more than one N - general**
E07-D13A	**. Production of 1,3,5-triazines** **1975**
E07-D13B	**. Use of 1,3,5-triazines** **1975**
E07-D13C	**. General, excluding 1,3,5-triazines** **1975**
E07-E	**SOLE HETEROS O AND N**
E07-E01	**With one O and one N, < 6 membered**
E07-E02	**Oxazines, excluding morpholine**
E07-E03	**Morpholine**
E07-E04	**Other heterocyclic, mononuclear ring - sole heteros O and N**
E07-F	**SOLE HETEROS S AND N**
E07-F01	**With one S and one N, < 6 membered**
E07-F02	**Thiazines**
E07-F03	**Other heterocyclic, mononuclear ring - sole heteros S and N**
E07-G	**SOLE HETEROS O AND S AND N**
E07-G	**General**
E07-H	**MONONUCLEAR HETEROCYCLIC - GENERAL** These codes are used for general disclosures when no specific hetero-ring system is present or when many are present.
E07-H	**General**
E07-H01	**Production when ring linked directly to -C(=O)-, -C(=S)-, -C(=N)-, CN or heteroatom** **1975**
E07-H02	**Others, production** **1975**
E07-H03	**Use of E07-H01 type heterocyclic** **1975**
E07-H04	**Others, use** **1975**
E07-S	**SPIROFUSED MONOCYCLIC HETEROCYCLES** To be applied in conjunction with specific ring code(s) from E07-A to E07-G. **2021**

E08 AROMATIC, POLYCARBOCYCLIC

Includes only those compounds containing more than two carbocyclic rings fused together, at least one of which is 6-membered with 3 conjugated double bonds (or quinone derivatives thereof). Mono- and bi-cyclo-aromatics are coded in E10.

E08-A	**AT LEAST SIX RINGS FUSED**
E08-A	**General**
E08-B	**FIVE RINGS FUSED**
E08-B	**General**
E08-C	**FOUR RINGS FUSED**
E08-C01	**6:6:6:6 carbon atoms per ring**
E08-C02	**Other aromatic, polycarbocyclic containing four rings fused**
E08-D	**THREE RINGS FUSED**
E08-D01	**6:6:7 carbon atoms per ring**
E08-D02	**6:6:6 carbon atoms per ring**
E08-D03	**Other aromatic, polycarbocyclic containing three rings fused**
E08-H	**AROMATIC POLYCARBOCYCLE GENERAL**
E08-H	**General**

E09 ALICYCLIC, POLYCARBOCYCLIC

Includes only compounds containing more than two carbocyclic rings fused together, other than aromatics (see E08). Mono- and bi- cycloalkyl compounds are coded in E10.

E09-A	**AT LEAST SIX RINGS FUSED**
E09-A	**General**
E09-B	**FIVE RINGS FUSED**
E09-B	**General**
E09-C	**FOUR RINGS FUSED**
E09-C01	**6:6:6:6 carbon atoms per ring**
E09-C02	**Other alicyclic, polycarbocyclic containing four rings fused**
E09-D	**THREE RINGS FUSED**
E09-D01	**6:6:6 carbon atoms per ring**
E09-D02	**Other alicyclic, polycarbocyclic containing three rings fused**
E09-H	**ALICYCLIC POLYCARBOCYCLE GENERAL**
E09-H	**General**

2002

E10 AROMATIC AND CYCLO ALIPHATIC (MONO AND BICYCLIC ONLY), ALIPHATIC

In E10, compounds are coded according to the type of functional group present (if any). Only one code is applied to a specific compound according to the following order of priority:-

E10-A > E10-B –> E10-J and 01 > 02 > 03 etc.

Thus E10-A01 is the highest, and E10-J02D is the lowest priority code.

Note

1. For acidic or basic salts see the parent compounds (i.e. amines, acids, etc.).
2. For all cyclic derivatives of the groups listed in section E10, see E01 to E07.
3. For groups not listed in section E10, the highest priority segment of the group is used as its coding feature. For example, semi-carbazones are coded E10-A13B only, and **not** E10-A19 nor E10-A20.
4. From 198601 the more general codes E10-B01, -B02, -B03, -B04, -C04 and -H02 were introduced and are used only where e.g. unspecified 'amines' are given, to save using many codes.

E10-A **RARER CHEMICAL GROUPS**

E10-A01 **Sulfonium, halonium, carbonium, oxonium, aminimide, ylid, free radical**
Includes carbanion.

E10-A02 **Halogen bonded to Hal, N or O**

E10-A03 **Nitrogen oxide, nitroso, nitrone, azoxy, nitrolic acid**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-A03A **. Nitrone, nitrolic acid**
2002

E10-A03B **. Nitrogen oxide ($R3N^{V}=O$), azoxy (R-N=N(=O)-R)**
Excluding nitrones, nitrolic acids
2002

E10-A03C **. Nitroso ($R\text{-}N^{III}=O$)**
Excluding nitrones, nitrolic acids.
2002

E10-A04 **Peroxide, polysulfide - general**
Excluding thiosulfate, etc.

E10-A04A **. Polysulfide**
1986

E10-A04B **. Peroxide**
1986

E10-A04B1 **.. Aromatic peroxides, gen**
Peroxides of aromatic acids or alcohols, e.g. R-OO- ; RCO-O-O-); R-SO2-O-O-
2002

E10-A04B1A **... Diacylperoxides**
e.g. RCO-O-O-CO-R); R-SO2-O-O-SO2-R
2002

E10-A04B1B **... Peresters**
Includes percarbonic acid esters (aromatic) e.g. R-CO-O-O-R, R-SO2-O-O-R.
2002

E10-A04B1C **... Peracids**
Includes percarbonic acid (aromatic) e.g. R-CO-O-O-H; R-SO2-O-O-H.
2002

E10-A04B1D **... Peroxides, other**
e.g. Ph-O-O-tBu.
2002

E10-A04B1E **... Hydroperoxides, other**
e.g. Ph-O-O-H.
2002

E10-A04B2 **.. (Cyclo)aliphatic peroxides, gen**
Peroxides of non-Aromatic Acids or alcohols.
2002

E10-A04B2A **... Diacylperoxides**
e.g. RCO-O-O-CO-R; R-SO2-O-O-SO2-R.
2002

E10-A04B2B **... Peresters**
Include percarbonic acid esters (aliphatic) e.g. R-CO-O-O-R, R-SO2-O-O-R.
2002

E10-A04B2C **... Peracids**
Includes percarbonic acid (aliphatic) e.g. R-CO-O-O-H; R-SO2-O-O-H.
2002

E10-A04B2D **... Peroxides, other**
e.g. PhCH2-O-O-tBu;
2002

E10-A04B2E **... Hydroperoxides, other**
e.g. tBu-O-O-H.
2002

E10-A05 **Nitrate, nitrite**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-A06 **Quinone (derivative)**
1970-1993
Now coded as: E10-A06A,E10-A06B

E10-A06A **. Quinone**
1994
Previous code(s): E10-A06

E10-A06B **. Quinone derivative (except those with higher priority)**
1994
Previous code(s): E10-A06

E10-A07 **Sugar**
Oxygen atom(s) may be replaced by sulfur atom(s). This code includes all derivatives except those of higher priority. Sugars containing free ketonic or aldehyde function are coded in open chain (not cyclic) form. For example, glucose is coded E10-A07 but methyl glucoside is coded E07-A02H.

E10-A07A **. Unmodified sugar**
Including ethers and esters thereof.
2005

E10-A07B **. Sugar alcohol**
Including ethers and esters thereof.
2005

E10-A07C **. Sugar acid**
Including ethers and esters thereof.
2005

E10-A07D **. Sugar amine**
2005

E10-A07E **. Other sugar derivatives**
2005

E10-A08 **Amide of sulfur acid - general**

E10-A08A **. Aromatic ring to N**
1986

E10-A08B **. Aromatic ring to S**
1986

E10-A08C **. Other aromatic and cyclo aliphatic (mono + bicyclic only), aliphatic - with amide of sulfur acid**
1986

E10-A09A **Sulfuric(ous) acid**
Oxygen atom(s) may be replaced by sulfur atom(s). This code includes all derivatives except those of higher priority.

E10-A09A1 **. Ether sulfates**
Sulfuric acid esters of ethoxylated alcohols.
2005

E10-A09A2 **. Aliphatic sulfates**
2005

E10-A09A3 **. Aromatic sulfates**
2005

E10-A09A4 **. Other derivatives**
2005

E10-A09B **Sulfonic acid - general**
Codes E10-A09B to E10-A09B5 include all derivatives except those of higher priority and oxygen atom(s) may be replaced by sulfur atom(s).

E10-A09B1 **. (Thio)sulfonic ester, halide, anhydride; thiosulfonic acid**
1975

E10-A09B2 **. Sulfonic acid - with hetero group (atom) - general**
1975

E10-A09B6 **.. fused ring(s) present**
1986

E10-A09B7 **.. single ring(s) present**
1986

E10-A09B8 **.. no ring(s) present**
N.B. These last three codes are subdivisions of E10-A09B2.
1986

E10-A09B3 **. Sulfonic acid - with no hetero group (atom), production**
1975

E10-A09B4 **. Aromatic sulfonic acid - with no hetero group (atom), use**
1975

E10-A09B5 **. (Cyclo)aliphatic sulfonic acid - with no hetero group (atom), use**
1975

E10-A09C **Other S acid**
Oxygen atom(s) may be replaced by sulfur atom(s). This code includes all derivatives except those of higher priority.

E10-A10 **Sulfone, sulfoxide - general**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-A10A **. Sulfoxide**
1986

E10-A10B **. Diaryl sulfone**
Both aryl groups attached directly to one -SO2-.
1986

E10-A10C **. Monoaryl sulfone**
Aryl group attached directly to SO2.
1986

E10-A10D **. Other sulphone, sulphoxide**
1986

E10-A11A **Thiocarbonic acid**
Codes E10-A11A to E10-A12C2 include all corresponding derivatives except those of higher priority.
1970-1993
Now coded as: E10-A11A1, E10-A11A2

E10-A11A1 **. Thiocarbonic acid, production**
1994
Previous code(s): E10-A11A

E10-A11A2 **. Thiocarbonic acid, use**
1994
Previous code(s): E10-A11A

E10-A11B **Carbonic acid**
1970-1993
Now coded as: E10-A11B1, E10-A11B2

E10-A11B1 **. Carbonic acid, production**
1994
Previous code(s): E10-A11B

E10-A11B2 **. Carbonic acid, use**
1994
Previous code(s): E10-A11B

E10-A12A **Dithiocarbamic acid**
1970-1993
Now coded as: E10-A12A1, E10-A12A2

E10-A12A1 **. Dithiocarbamic acid, production**
1994
Previous code(s): E10-A12A

E10-A12A2 **. Dithiocarbamic acid, use**
1994
Previous code(s): E10-A12A

E10-A12B **Monothiocarbamic acid**
1970-1993
Now coded as: E10-A12B1, E10-A12B2

E10-A12B1 **. Monothiocarbamic acid, production**
1994
Previous code(s): E10-A12B

E10-A12B2 **. Monothiocarbamic acid, use**
1994
Previous code(s): E10-A12B

E10-A12C **Carbamic acid**
1970-1993
Now coded as: E10-A12C1, E10-A12C2

E10-A12C1 **. Carbamic acid, production**
1994
Previous code(s): E10-A12C

E10-A12C2 **. Carbamic acid, use**
1994
Previous code(s): E10-A12C

E10-A13A **(Iso)thiourea**
1970-1993
Now coded as: E10-A13A1, E10-A13A2

E10-A13A1 **. (Iso)thiourea, production**
1994
Previous code(s): E10-A13A

E10-A13A2 **. (Iso)thiourea, use**
1994
Previous code(s): E10-A13A

E10-A13B **(Iso)urea**
1970-1993
Now coded as: E10-A13B1, E10-A13B2

E10-A13B1 **. (Iso)urea, production**
1994
Previous code(s): E10-A13B

E10-A13B2 **. (Iso)urea, use**
1994
Previous code(s): E10-A13B

E10-A14 **(Iso)cyanate, nitrile oxide**
Oxygen atom may be replaced by sulfur atom.
1970-1993
Now coded as: E10-A14A, E10-A14B

E10-A14A **. (Iso)cyanate, nitrile oxide, production**
Oxygen atom may be replaced by sulfur atom.
1994
Previous code(s): E10-A14

E10-A14B **. (Iso)cyanate, nitrile oxide, use**
Oxygen atom may be replaced by sulfur atom.
1994
Previous code(s): E10-A14

E10-A15 **(Iso)cyanide - general**

E10-A15A **. Poly(iso)cyanide and monoisocyanide**
1975

E10-A15B **. Cyanide with aliphatic unsaturation, production**
1975

E10-A15C **. Cyanide with aliphatic unsaturation, use**
1975

E10-A15D **. Other cyanide, production with CN formation**
1975

E10-A15E **. Other cyanide, production without CN formation**
CN group is in a starting material and remains bonded to the same atom when in the product.
1975

E10-A15F **. Other cyanide, use**
1975

E10-A16 **Azide, azo, diazo(nium)**
1970-1993
Now coded as: E10-A16A, E10-A16B

E10-A16A **. Azide, azo, diazo(nium), production**
1994
Previous code(s): E10-A16

E10-A16B **. Azide, azo, diazo(nium), use**
1994
Previous code(s): E10-A16

E10-A17 **Biguanide, guanidine, amidine**
1970-1993
Now coded as: E10-A17A, E10-A17B

E10-A17A **. Biguanide, guanidine, amidine, production**
1994
Previous code(s): E10-A17

E10-A17B **. Biguanide, guanidine, amidine, use**
1994
Previous code(s): E10-A17

E10-A18 **Hydroxylamine**
1970-1993
Now coded as: E10-A18A, E10-A18B

E10-A18A **. Hydroxylamine, production**
Include organic hydroxamic acid production.
1994
Previous code(s): E10-A18

E10-A18B **. Hydroxylamine, use**
Include organic hydroxamic acid use.
1994
Previous code(s): E10-A18

E10-A19 **Hydrazine**
1970-1993
Now coded as: E10-A19A, E10-A19B

E10-A19A **. Hydrazine, production**
Covers hydrazines and hydrazones production. Hydrazine itself is inorganic, so one end at least must be attached to an organic residue. Inorganic hydrazine codes E31-H04.
1994
Previous code(s): E10-A19

E10-A19B **. Hydrazine, use**
Covers hydrazines and hydrazones use. Hydrazine itself is inorganic, so one end at least must be attached to an organic residue. Inorganic hydrazine codes E31-H04.
1994
Previous code(s): E10-A19

E10-A20 **Imine**
1970-1993
Now coded as: E10-A20A,E10-A20B

E10-A20A **. Imine, production**
1994
Previous code(s): E10-A20

E10-A20B **. Imine, use**
1994
Previous code(s): E10-A20

E10-A21 **Quaternary ammonium (bis or poly)**
Where a patent claims amines and their quaternary ammonium salts, only the code corresponding to the parent amine is applied. Thus to obtain all relevant quaternary compounds, two searches must be made.

E10-A22 **Quaternary ammonium (mono) - general**

E10-A22A **. Aromatic ring present**
1986

E10-A22B **. No aromatic ring - general**
1986

E10-A22C **. No aromatic ring - with amine**
1986

E10-A22D **. No aromatic ring - with acid (derivative)**
1986

E10-A22E **. No aromatic ring - with OH, ether**
1986

E10-A22F **. No aromatic ring - with other hetero group (atom)**
1986

E10-A22G **. No aromatic ring - with no hetero atom(s)**
1986

E10-A23 **Acetal, ketal**
Including those with C atom in a ring. Oxygen atom(s) may be replaced by sulfur atom(s).
1970-1993
Now coded as: E10-A23A, E10-A23B

E10-A23A . **Acetal, ketal, production**
Including those with C atom in a ring. Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A23

E10-A23B . **Acetal, ketal, use**
Including those with C atoms in a ring. Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A23

E10-A24 **Imide**
Oxygen atom(s) may be replaced by sulfur atom(s).
1970-1993
Now coded as: E10-A24A, E10-A24B

E10-A24A . **Imide, production**
Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A24

E10-A24B . **Imide, use**
Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A24

E10-A25 **Acid anhydride, halide (carboxylic only)**
Oxygen atom(s) may be replaced by sulfur atom(s).
1970-1993
Now coded as: E10-A25A1, E10-A25A2, E10-A25B1, E10-A25B2

E10-A25A1 . **Acid anhydride, production**
Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A25

E10-A25A2 . **Acid anhydride, use**
Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A25

E10-A25B1 . **Acid halide, production**
Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A25

E10-A25B2 . **Acid halide, use**
Oxygen atom(s) may be replaced by sulfur atom(s).
1994
Previous code(s): E10-A25

E10-B **AMINES**

E10-B01 **Polyamine - general**
1986

E10-B01A . **Polyamine, at least 1 amine 'aromatic' - general**
i.e. amino N on aromatic ring C.

E10-B01A1 .. **with acid (derivative)**
1986

E10-B01A2 .. **With OH, ether**
1986

E10-B01A3 .. **other, production**
1986

E10-B01A4 .. **other, use**
1986

E10-B01B . **Polyamine with no amine aromatic- general**

E10-B01C .. **Non-aromatic Polyamine, with carboxylic acid, ester or amide group**
1975

E10-B01C1 ... **With carboxylic acid group**
2002

E10-B01C2 ... **With carboxylic acid ester group**
2002

E10-B01C3 ... **With carboxylic acid amide group**
2002

E10-B01D .. **with hydroxy, mercapto or (thio)ether group**
1975

E10-B01E .. **others**
1975

E10-B02 **Amino-acid, -ester or -amide - general**
1986

E10-B02A . **Aromatic amino-acid, -ester or -amide group**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-B02A1 .. **With carboxylic acid group**
2002

E10-B02A2 .. **With carboxylic acid ester group**
2002

E10-B02A3 .. **With carboxylic acid amide group**
2002

E10-B02B . **Amino-acid, -ester or -amide (amine not aromatic) - general**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-B02C **. mixtures containing at least 3 naturally occurring amino acids**
1975

E10-B02D **. Alpha-amino acid (or derivative of carboxyl group) general. Primary amine, only one side-chain which...**
1975

E10-B02D1 **.. contains S**
e.g. Cys, Met.
1986

E10-B02D2 **.. contains benzene and phenolic OH**
e.g. Tyr.
1986

E10-B02D3 **.. is benzyl unsubstituted**
i.e. Phe.
1986

E10-B02D4 **.. contains alcohol (derivative)**
e.g. Ser, Thr.
1986

E10-B02D5 **.. contains acid (derivative)**
e.g. Asp, Glu.
1986

E10-B02D6 **.. is alkyl unsubstituted**
e.g. Ala, Gly, Ile, Leu, Val.
1986

E10-B02D7 **.. Primary amine other**
1986

E10-B02D8 **.. Secondary, tertiary amine**
1986

E10-B02E **. others**
Oxygen atom(s) may be replaced by sulfur atom(s).
1975

E10-B03 **Amino-phenol, - alcohol or ether - general**
Oxygen atom(s) may be replaced by sulfur atom(s).
1986

E10-B03A **. Amino-phenol, - alcohol or ether – general (amine aromatic)**
N directly attached to aromatic ring; Oxygen atom(s) may be replaced by sulfur atom(s).

E10-B03A1 **.. Aromatic amino-phenol**
2002

E10-B03A2 **.. Aromatic amino-alcohol**
e.g. Ph-NH-C2H4-OH.
2002

E10-B03A3 **.. Aromatic amino-ether**
e.g. Ph-NH-C2H4-OR.
2002

E10-B03B **. Amino-phenol, - alcohol or ether – general (amine not aromatic)**
N **not** directly attached to aromatic ring; Oxygen atom(s) may be replaced by sulfur atom(s).

E10-B03B1 **.. Amino-phenol**
e.g. NH2C2H4-O-p C6H4-OH.
2002

E10-B03B2 **.. Amino-alcohol**
Includes mono, di and tri alkanolamines e.g. NH2-C2H4-OH.
2002

E10-B03B3 **.. Aminopolyether**
e.g. NH2-(C2H4-O)nR.
2002

E10-B03B4 **.. Amino-ether**
e.g. NH2-C2H4-OR
2002

E10-B04 **Amine mono - general**
1986

E10-B04A **. Other aromatic amine**
1970-1993
Now coded as: E10-B04A1, E10-B04A2

E10-B04A1 **.. Other aromatic amine, production**
1994
Previous code(s): E10-B04A

E10-B04A2 **.. Other aromatic amine, use**
1994
Previous code(s): E10-B04A

E10-B04B **. Other non-aromatic amine – general**

E10-B04C **. Production of other non-aromatic amine**
1975

E10-B04C1 **.. Primary amine**
2002

E10-B04C2 **.. Secondary or tertiary amine**
2002

E10-B04D **. Use of unsubstituted aliphatic amine**
Excluding cycloaliphatic.
1975

E10-B04D1 **.. Primary amine**
2002

E10-B04D2 **.. Secondary or tertiary amine**
2002

E10-B04E **. Use of other aliphatic amine**
Including cycloaliphatic, substituted aliphatic.
1975

E10-B04E1 **.. Primary amine**
2002

E10-B04E2 **.. Secondary or tertiary amine**
2002

E10-C **CARBOXYLIC ACIDS (CA)**

E10-C01 **Thio-CA**

E10-C02 **Poly-CA - general**

E10-C02A **. Citric or isocitric acid**
1975

E10-C02B **. Others with > 2 carboxy groups**
1975

E10-C02C **. Di-CA with carbocyclic ring(s)**
1975-1993
Now coded as: E10-C02C1, E10-C02C2

E10-C02C1 **.. Di-CA with carbocyclic ring(s), production**
Applied if both subcodes below could be applied.
1994
Previous code(s): E10-C02C

E10-C02C1A **... Di-CA with aromatic ring, production**
2010

E10-C02C1B **... Di-CA with cycloaliphatic ring, production**
2010

E10-C02C2 **.. Di-CA with carbocyclic ring(s), use**
Applied if both subcodes below could be applied.
1994
Previous code(s): E10-C02C

E10-C02C2A **... Di-CA with aromatic ring, use**
2010

E10-C02C2B **... Di-CA with cycloaliphatic ring, use**
2010

E10-C02D **. Oxalic acid; unsubstituted alkylene di-CA**
1975-1993
Now coded as: E10-C02D1, E10-C02D2

E10-C02D1 **.. Oxalic acid**
1994
Previous code(s): E10-C02D

E10-C02D2 **.. Unsubstituted alkylene di-CA**
1994
Previous code(s): E10-C02D

E10-C02E **. Other di-CA, production**
1975

E10-C02F **. Other di-CA, use**
1975

E10-C03 **CA with phenol or phenolic ester or ether group(s)**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-C04 **Other carboxylic acid - general**
1986

E10-C04A **. CA with cycloaliphatic ring system**

E10-C04B **. Hydroxy, aldehyde or ketonic CA (or ethers thereof) with an aromatic ring**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-C04C **. Other CA with aromatic ring**

E10-C04D **. Acyclic hydroxy, aldehyde or ketonic CA and acyclic ether thereof - general**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-C04D1 **.. aldehyde, ketone present**
1986

E10-C04D2 **.. S present**
1986

E10-C04D3 **.. ether present**
1986

E10-C04D4 **.. alpha OH acid**
1986

E10-C04D5 **.. other OH acid**
1986

E10-C04D6 **.. Acid contains amide substituent**
Acyclic carboxylic acid with amide functional group.
2019

E10-C04E **. Other acyclic mono-CA - general**

E10-C04F **. substituted acyclic acid**
1975

E10-C04G **. (Meth)acrylic acid**
1975

E10-C04G1 **.. (Meth)acrylic acid, production**
2002

E10-C04G1A **... Acrylic acid, production**
Specifically AA production
2002

E10-C04G1B **... Methacrylic acid, production**
Specifically MA production
2002

E10-C04G2 **.. (Meth)acrylic acid, use**
2002

E10-C04G2A **... Acrylic acid, use**
Use of AA specifically
2002

E10-C04G2B **... Methacrylic acid, use**
Use of MA specifically
2002

E10-C04H **. Other unsaturated unsubstituted acid**
1975

E10-C04J **. Formic, acetic acid**
1975-1993
Now coded as: E10-C04J1, E10-C04J2

E10-C04J1 **.. Formic acid - general**
1994
Previous code(s): E10-C04J

E10-C04J1P **... Formic acid, production**
2002

E10-C04J1U **... Formic acid, use**
2002

E10-C04J2 **.. Acetic acid - general**
1994
Previous code(s): E10-C04J

E10-C04J2P **... Acetic acid, production**
2002

E10-C04J2U **... Acetic acid, use**
2002

E10-C04K **. Other acid, production**
1975

E10-C04L **. Other acid, use - general**
1975

E10-C04L1 **.. 2-9C**
Excluding C of carboxy.
1986

E10-C04L2 **.. 10+C**
Excluding C of carboxy.
1986

E10-D **ALDEHYDES AND CARBOXYLIC AMIDES**

E10-D01 **Aldehyde - general**
Oxygen atom(s) may be replaced by sulfur atom(s).

E10-D01A **. (Meth)acrolein, production**
1975

E10-D01B **. Other aldehyde, production by olefin oxidation**
1975

E10-D01C **. Other aldehyde, production by other methods**
Oxygen atom(s) may be replaced by sulfur atom(s).
1975

E10-D01D **. Use**
Oxygen atom(s) may be replaced by sulfur atom(s).
1975

E10-D02 **Carboxylic amide, thio**

E10-D03 **Carboxylic amide - general**

E10-D03A **. Polyamide**
1975

E10-D03A1 **.. Polyamide containing aromatic ring(s)**
2011

E10-D03A2 **.. Polyamide not containing aromatic ring(s)**
2011

E10-D03B **. Containing phenol group(s)**
1975

E10-D03C **. Amide of unsubstituted fatty acid, optionally unsaturated, optionally N-substituted**
1975

E10-D03C1 **.. Formamides, opt. N-substituted**
2002

E10-D03C2 **.. Amide of >1C unsubstituted fatty acid, optionally unsaturated, N-substituted by polyether**
Including polyetheralcohols, esters; e.g. R-CO1-N (-R'-O)n-R', R' = H, C, -CO1-R, etc.
2002

E10-D03C3 **.. Amide of >1C unsubstituted fatty acid, optionally unsaturated, optionally N-substituted**
Excluding N-polyether derivatives (coded E10-D03C2)
2002

E10-D03D **. Other carboxylic amides**
1975

E10-E **HYDROXY COMPOUNDS**
Within section E10-E the term **naphthol** includes all aromatic bicyclic compounds with phenolic OH. e.g. 1H-Inden-4-ol or 5, 6, 7, 8-tetrahydro-1-naphthol.

E10-E01 **Thiophenols, thionaphthols**

E10-E01P **. Thiophenols, thionaphthols production**
2002

E10-E01U **. Thiophenols, thionaphthols – use**
2002

E10-E02 **Phenol - general**
1970-1993
Now coded as: E10-E02P, E10-E02U

E10-E02P **Phenol, naphthol, general, production**
1994
Previous code(s): E10-E02

E10-E02A **. Polyphenol, polynaphthol, production**
1975

E10-E02B **. Phenol or naphthol (optionally substituted only by hydrocarbyl) production**
1975-1993
Now coded as: E10-E02B1, E10-E02B2

E10-E02B1 **.. Phenol (optionally substituted only by hydrocarbyl) production**
1994
Previous code(s): E10-E02B

E10-E02B2 **.. Naphthol (optionally substituted only by hydrocarbyl) production**
1994
Previous code(s): E10-E02B

E10-E02C **. Other phenol, production**
1975-1993
Now coded as: E10-E02C1, E10-E02C2

E10-E02C1 **.. Other phenol, production**
1994
Previous code(s): E10-E02C

E10-E02C2 **.. Other naphthol, production**
1994
Previous code(s): E10-E02C

E10-E02U **Phenol, naphthol, general - use**
1994
Previous code(s): E10-E02

E10-E02D **. Polyphenol, polynaphthol, use - general**
1975

E10-E02D1 **.. nitro, S, X present**
1986

E10-E02D2 **.. O present, other than phenol**
1986

E10-E02D3 **.. with 3 or more phenolic OH**
1986

E10-E02D4 **.. with 2 phenolic OH and 2 or more ring systems**
1986

E10-E02D5 **.. with 2 phenolic OH and 1 ring system**
1986

E10-E02E **. Phenol or naphthol (optionally substituted only by hydrocarbyl), use**
1975-1993
Now coded as: E10-E02E1, E10-E02E2

E10-E02E1 **.. Phenol (optionally substituted only by hydrocarbyl) use**
1994
Previous code(s): E10-E02E

E10-E02E2 **.. Naphthol (optionally substituted only by hydrocarbyl) use**
1994
Previous code(s): E10-E02E

E10-E02F **. Other phenol, use**
1975-1993
Now coded as: E10-E02F1, E10-E02F2

E10-E02F1 **.. Other phenol, use**
1994
Previous code(s): E10-E02F

E10-E02F2 **.. Other naphthol, use**
1994
Previous code(s): E10-E02F

E10-E03 **Thioalcohols - general**

E10-E03A **. Polythiol contg. carboxylic ester gp, production**
2002

E10-E03B **. Unsubstituted alkane polythiol, production**
2002

E10-E03C **. Other polymercaptoalkanes, production**
2002

E10-E03D **. Monothiol containing carboxylic ester gp, production**
2002

E10-E03E **. Unsubstituted alkanethiol, production**
2002

E10-E03F **. Other alkanethiol production**
2002

E10-E03G **. Polythiol contg. carboxylic ester gp, use**
2002

E10-E03H **. Unsubstituted alkane polythiol, use**
2002

E10-E03J **. Other polymercaptoalkanes, use**
2002

E10-E03K **. Monothiol containing carboxylic ester gp, use**
2002

E10-E03L **. Unsubstituted alkanethiol, use**
2002

E10-E03M **. Other alkanethiol, use**
2002

E10-E03P **. Thiol production, general**
Covers very generic information, or when three or more thiol production codes are applicable.
2014

E10-E03U **. Thiol use, general**
Covers very generic information, or when three or more thiol use codes are applicable.
2014

E10-E04 **Alcohol - general**

E10-E04A **. Polyhydric containing carboxylic ester group(s) production**
1975

E10-E04B **. Unsubstituted polyhydroxy-alkane, production**
1975

E10-E04C **. Other polyhydric alcohol, production**
1975

E10-E04C1 **.. Polyetherpolyol, production**
Incl polyglycol-, polyglyceryl-, ethers.
2002

E10-E04C2 **.. Other polyhydric alcohol, production**
2002

E10-E04D **. Monohydric containing carboxylic ester group(s), production**
1975

E10-E04D1 **.. Monohydric contg polyetherpolyol carboxylic ester group(s), production**
[RCO(-O-R')n-O]m-R-OH (m>0, n>1).
2002

E10-E04D2 **.. Other monohydric alcohol containing carboxylic ester(s), production**
2002

E10-E04E **. Unsubstituted alkanol production - general**
1975

E10-E04E1 **.. methanol**
1986

E10-E04E2 **.. ethanol**
1986

E10-E04E3 **.. propanols, butanols**
1986

E10-E04E4 **.. with 5-10C**
1986

E10-E04E5 **.. with 11 or more C**
1986

E10-E04F **. Other monohydric alcohol, production**
1975

E10-E04G **. Polyhydric, containing carboxylic ester group(s) use**
1975

E10-E04H **. Unsubstituted polyhydroxy-alkane, use**
1975

E10-E04H1 **.. Diol**
2005

E10-E04H2 **.. Triol**
2005

E10-E04H3 **.. 4 or more hydroxy**
Not including sugar alcohol (see E10-A07B).
2005

E10-E04J **. Other polyhydric alcohol, use**
1975

E10-E04J1 **.. Ring present**
2005

E10-E04J2 **.. Ketone, nitro, halogen or unsaturation present**
2005

E10-E04J3 **.. Ether present, poly**
2005

E10-E04J4 **.. Ether present, mono**
2005

E10-E04K **. Monohydric, containing carboxylic ester group(s) use**
1975

E10-E04L **. Unsubstituted alkanol, use - general**
1975

E10-E04L1 **.. methanol**
1986

E10-E04L2 **.. ethanol**
1986

E10-E04L3 **.. propanols, butanols**
1986

E10-E04L4 **.. with 5-10C**
1986

E10-E04L5 **.. with 11 or more C**
1986

E10-E04M **. Other monohydric alcohol, use -general**
1975

E10-E04M1 **.. ring(s) present**
1986

E10-E04M2 **.. ketone, nitro, halogen or unsaturation present**
1986

E10-E04M3 **.. ether present, poly**
1986

E10-E04M4 .. **ether present, mono**
1986

E10-F **KETONES**

E10-F01 **Thioketone**

E10-F02 **Ketone – general**

E10-F02A . **With carbocyclic ring(s) - general**
1975

E10-F02A1 .. **ketone on ring**
1986

E10-F02A2 .. **ketone on chain of aromatic compound**
1986

E10-F02A3 .. **ketone on chain of alicyclic compound**
1986

E10-F02B . **Other ketone, production**
1975

E10-F02C . **Other ketone, use**
1975

E10-G **CARBOXYLIC ESTERS AND NITRO COMPOUNDS**
1994

E10-G01 **Thiocarboxylic ester**

E10-G02 **Carboxylic ester – general**

E10-G02P . **Production of esters - general**
2005

E10-G02A . **With carbocyclic ring, production**
1975-1993
Now coded as: E10-G02A1, E10-G02A2

E10-G02A1 .. **With aromatic ring, production**
1994
Previous code(s): E10-G02A

E10-G02A2 .. **With alicyclic ring, production**
1994
Previous code(s): E10-G02A

E10-G02B . **Other polyester, production**
1975-1993
Now coded as: E10-G02B1, E10-G02B2

E10-G02B1 .. **Aliphatic polyester with halogen or (thio)ether group(s), production**
1994
Previous code(s): E10-G02B

E10-G02B2 .. **Other aliphatic polyester production**
1994
Previous code(s): E10-G02B

E10-G02C . **Aliphatic monoester with halogen or (thio)ether group(s), production**
1975

E10-G02D . **Unsaturated monoester, production**
1975

E10-G02D1 .. **Monoesters of unsaturated alcohols and unsaturated acids (e.g. vinyl acrylate), production**
2002

E10-G02D2 .. **Other monoesters of unsaturated alcohols (e.g. vinyl acetate), production**
2002

E10-G02D3 .. **(Meth)acrylic acid esters, production**
2002

E10-G02D4 .. **Monoesters of other unsaturated acids, production**
2002

E10-G02E . **Other aliphatic monoester, production**
1975

E10-G02U . **Use of esters - general**
2005

E10-G02F . **Ester with carbocyclic ring(s), use**
1975-1993
Now coded as: E10-G02F1, E10-G02F2

E10-G02F1 .. **Ester with aromatic ring, use**
1994
Previous code(s): E10-G02F

E10-G02F2 .. **Ester with alicyclic ring, use**
1994
Previous code(s): E10-G02F

E10-G02G . **Other polyester, use**
1975-1993
Now coded as: E10-G02G1, E10-G02G2

E10-G02G1 .. **Aliphatic polyester with halogen or (thio)ether group(s), use**
1994
Previous code(s): E10-G02G

E10-G02G2 .. **Other aliphatic polyester, use**
1994
Previous code(s): E10-G02G

E10-G02H . **Other monoester, use**
1975-1993
Now coded as: E10-G02H1, E10-G02H2

E10-G02H1 .. **Aliphatic monoester with halogen or (thio)ether group(s), use**
1994
Previous code(s): E10-G02H

E10-G02H2 **.. Other aliphatic monoester, use gen**
1994
Previous code(s): E10-G02H

E10-G02H2A **... Monoesters of unsaturated alcohols and unsaturated acids (e.g. vinyl acrylate), use**
2002

E10-G02H2B **... Other monoesters of unsaturated alcohols (e.g. vinyl acetate), use**
2002

E10-G02H2C **... (Meth)acrylic acid esters), use**
2002

E10-G02H2D **... Monoesters of other unsaturated acids, use**
2002

E10-G02H2E **... Saturated aliphatic esters (other), use**
2002

E10-G03 **Nitro compounds, general**
One of the more specific codes are always applied in preference, unless 3 or more of them could be applied to the patent.
1994

E10-G03A **. With carbocyclic ring, production**
1994
Previous code(s): E10-G03

E10-G03B **. Other nitro, production**
1994
Previous code(s): E10-G03

E10-G03C **. With carbocyclic ring, use**
1994
Previous code(s): E10-G03

E10-G03D **. Other nitro, use**
1994
Previous code(s): E10-G03

E10-H ETHERS AND HALOGEN COMPOUNDS

E10-H01 **Ether and thioether - general**

E10-H01A **. Thioether with halogen**
1986

E10-H01B **. Thioether with no halogen**
1986

E10-H01C **. Ether with halogen**
1986

E10-H01D **. Ether with no halogen, poly**
1986

E10-H01E **. Ether with no halogen, mono**
1986

E10-H02 **Halogen - general**
From 199401, a new set of codes have been applied to halogen compounds which do not follow the same priority system, nor are they a subdivision, of the previous E10-H02 section codes.
1986-1993

E10-H02A **. F, bonded to aromatic ring**
1970-1993

E10-H02B **. F, not bonded to aromatic ring**
1970-1993

E10-H02C **. Br or I, bonded to aromatic ring**
1970-1993

E10-H02D **. Br or I, not bonded to aromatic ring**
1970-1993

E10-H02E **. Cl, bonded to aromatic ring**
1970-1993

E10-H02F **. Cl, not bonded to aromatic ring - general**
1970-1993

E10-H02G **.. containing carbocyclic ring(s); poly-chloro-alkene and -alkyne**
1975-1993

E10-H02H **.. polychloroalkane**
1975-1993

E10-H02J **.. monochloro-alkene and -alkyne**
1975-1993

E10-H02K **.. monochloro-alkane**
1975-1993

E10-H03 **Halogen production - general**
1994
Previous code(s): E10-H02

E10-H03A **. F only production - general**
1994
Previous code(s): E10-H02, E10-H02A, E10-H02B

E10-H03A1 **.. F only, F bonded to aromatic ring, production**
1994
Previous code(s): E10-H02A

E10-H03A2 **.. F only, other carbocyclic (including F on chain of aromatic ring), production**
1994
Previous code(s): E10-H02B

E10-H03A3 **.. F only, aliphatic, production**
1994
Previous code(s): E10-H02B

E10-H03B **. F + Cl only production - general**
1994
Previous code(s): E10-H02, E10-H02A, E10-H02B

E10-H03B1 **.. F + Cl only, carbocyclic, production**
1994
Previous code(s): E10-H02A, E10-H02B

E10-H03B2 **.. F + Cl only, aliphatic, production**
1994
Previous code(s): E10-H02B

E10-H03C **. Cl only production - general**
1994
Previous code(s): E10-H02, E10-H02E, E10-H02F

E10-H03C1 **.. Cl only, Cl bonded to aromatic ring, production**
1994
Previous code(s): E10-H02E

E10-H03C2 **.. Cl only, other carbocyclic (including Cl on chain of aromatic ring), production**
1994
Previous code(s): E10-H02F, E10-H02G

E10-H03C3 **.. Cl only, unsaturated aliphatic, production**
1994
Previous code(s): E10-H02G, E10-H02J

E10-H03C4 **.. Polychloroalkane, production**
1994
Previous code(s): E10-H02H

E10-H03C5 **.. Monochloroalkane, production**
1994
Previous code(s): E10-H02K

E10-H03D **. Other halogen compound production - general**
1994
Previous code(s): E10-H02

E10-H03D1 **.. Other halogen compound, carbocyclic, production**
1994
Previous code(s): E10-H02A, E10-H02B, E10-H02C, E10-H02D

E10-H03D2 **.. Other halogen compound,aliphatic, production**
1994
Previous code(s): E10-H02B, E10-H02D

E10-H04 **Halogen use - general**
1994
Previous code(s): E10-H02

E10-H04A **. F only use - general**
1994
Previous code(s): E10-H02, E10-H02A, E10-H02B

E10-H04A1 **.. F only, F bonded to aromatic ring, use**
1994
Previous code(s): E10-H02A

E10-H04A2 **.. F only, other carbocyclic (including F on chain of aromatic ring), use**
1994
Previous code(s): E10-H02B

E10-H04A3 **.. F only, aliphatic, use**
1994
Previous code(s): E10-H02B

E10-H04B **. F + Cl only use - general**
1994
Previous code(s): E10-H02, E10-H02A, E10-H02B

E10-H04B1 **.. F + Cl only, carbocyclic, use**
1994
Previous code(s): E10-H02A, E10-H02B

E10-H04B2 **.. F + Cl only, aliphatic, use**
1994
Previous code(s): E10-H02B

E10-H04C **. Cl only use - general**
1994
Previous code(s): E10-H02, E10-H02E, E10-H02F

E10-H04C1 **.. Cl only, Cl bonded to aromatic ring, use**
1994
Previous code(s): E10-H02E

E10-H04C2 **.. Cl only, other carbocyclic (including Cl on chain of aromatic ring), use**
1994
Previous code(s): E10-H02F, E10-H02G

E10-H04C3 **.. Cl only, unsaturated aliphatic, use**
1994
Previous code(s): E10-H02G, E10-H02J

E10-H04C4 **.. Polychloroalkane, use**
1994
Previous code(s): E10-H02H

E10-H04C5 **.. Monochloroalkane, use**
1994
Previous code(s): E10-H02K

E10-H04D **. Other halogen compound use - general**
1994
Previous code(s): E10-H02

E10-H04D1 **.. Other halogen compound, carbocyclic, use**
1994
Previous code(s): E10-H02A, E10-H02B, E10-H02C, E10-H02D

E10-H04D2 **.. Other halogen compound, aliphatic, use**
1994
Previous code(s): E10-H02B, E10-H02D

E10-J **HYDROCARBONS**

E10-J01 **-C-triple bond-C-, may form part of alicyclic ring**
1970-2011
Now coded as: E10-J01A, E10-J01B

E10-J01A **Alkyne/cycloalkyne production**
2012

E10-J01B **Alkyne/cycloalkyne use**
2012

E10-J02A **Cycloaliphatic ring system present**
1970-1993
Now coded as: E10-J02A1, E10-J02A2

E10-J02A1 **Cycloaliphatic ring system present, production**
1994
Previous code(s): E10-J02A

E10-J02A2 **Cycloaliphatic ring system present, use**
1994
Previous code(s): E10-J02A

E10-J02B **Aromatic - general**

E10-J02B1 **. Production by hydrodealkylation or disproportionation**
1977

E10-J02B2 **. Purification**
1977

E10-J02B3 **. Other production methods**
1977

E10-J02B4 **. Uses**
1977

E10-J02C **Aliphatic olefinic - general**

E10-J02C1 **. Production by oligomerisation**
1977

E10-J02C2 **. Production by disproportionation of other olefins**
1977

E10-J02C3 **. Other production methods**
1977

E10-J02C4 **. Uses**
1977

E10-J02D **Aliphatic saturated - general**

E10-J02D1 **. Methane**
1986

E10-J02D2 **. Ethane, propane, (iso)butane**
1986

E10-J02D3 **. 5 or more C**
1986

E11 PROCESSES, APPARATUS

The codes in this section are applied to patents difficult to code chemically, i.e. insufficient chemical information has been provided. These codes are also used for general processes involving the use or production of organic dyes, pigments or inorganic compounds, and for analysis or treatment processes. E11-A to E11-K are only applied to organic reactions. There are a number of patents (Russia) whose inventive feature is the use made of vat residue, or waste from a production process, of undefined chemical composition. From 1994-2009 the codes applied to these patents included the code E11-T.

CHEMICAL

E11-A **CYCLISATION**
1970-2006
Now coded as the more specific code(s) E11-A01, -A02

E11-A01 **. Cyclisation – processes, apparatus**
2006

E11-A01A **.. Forming carbocyclic rings**
2022

E11-A01B **.. Forming heterocyclic rings**
Includes formation of cyclic carbonates from epoxide and CO2 when applied alongside E11-F02B.
2022

E11-A02 **. Decyclisation (ring opening) – processes, apparatus**
2006

E11-A02A **.. Carbocyclic ring opening**
2026

E11-A02B **.. Heterocyclic ring opening**
2026

E11-B **RING/CHAIN-EXPANSION/CONTRACTION**
1970-2001
Now coded as: E11-B01, E11-F01, -F02, -F03, -G01, -G02

E11-B01 **. Ring expansion/contraction**
2002
Previously coded as: E11-B

E11-C **DEPOLYMERISATION**

E11-D **HYDROGENATION, REDUCTION**
Includes hydrogenolysis

E11-D01 **. Hydrogenation of unsaturated C-C bonds**
2006

E11-D02 **. Hydrogenation other**
2006

E11-E **OXIDATION, DEHYDROGENATION**

E11-E01 **. Oxidation with O2, air**
2006

E11-E02 **. Dehydrogenation of C-C bonds**
2006

E11-E03 **. Other oxidation, dehydrogenation process**
2006

E11-F **ADDITION OR SUBSTITUTION REACTIONS – GENERAL/UNCLASSIFIED**
From 2006 this code has been extended to cover both addition and substitution reactions. Substitution reactions were previously covered in E11-H.

E11-F01 **. Oligomerisation, telomerisation**
2002
Chain expansion previously coded under E11-B

E11-F01A **.. Dimerisation**
Dimerisation is a reaction in which two monomers combine to form a dimer. For example, conversion of ethene to butene.
2010

E11-F02 **. Addition reactions of CO and/or CO2: hydroformylation; (oxy)carbonylation; carboxylation; homologation; etc.**
2002
Chain expansion previously coded under E11-B

E11-F02A **.. Addition of CO to olefin bonds (hydroformylation)**
2006

E11-F02B **.. Other addition reactions of CO(2)**
2006

E11-F03 **. Alkylation, arylation, acylation of C atoms; condensation; other carbon chain extension; reforming**
2002
Chain expansion previously coded under E11-B

E11-F04 **. Hydration, Hydroxylation**
2002

E11-F05 **. Etherification, acetalisation, O-alkylation**
2002

E11-F06 **. Esterification, O-acylation, anhydride formation**
2002

E11-F07 **. Addition of nitrogenous functions, (general)**
2002

E11-F07A **.. Amination, N-alkylation, N-acylation**
2002

E11-F07B **.. Nitration**
2002

E11-F07C **.. Ammonia oxidation, ammoxidation**
2006

E11-F07D **.. Other N processes**
Used for specified nitrogen-containing groups and includes cyanation. General references code as E11-F07.
2010

E11-F08 **. (Hydro) halogenation**
2002

E11-F09 **. Addition of sulfur functions**
e.g. sulfonation.
2002

E11-F10 **. Addition of P / Si / B or other heteroatom (other than O, S, N and halogen)**
See also N07-D11.
2010

E11-F10A **.. Addition of phosphorus functions**
E.g. phosphorylation.
2013

E11-F10B **.. Addition of silicon functions**
E.g. silylation.
2013

E11-F10C **.. Addition of boron functions**
E.g. alkylation of boron.
2013

E11-F10D **.. Addition of isotope or other heteroatom (other than O, N, S and halogen)**
Reactions including metal carbon bond.
2013

E11-F11 **.. Complex and salt formation reactions**
Includes salts of organic ammonium compounds and salts of alcohols and counter ions.
2014

E11-G **ELIMINATION/ CLEAVAGE REACTIONS – GENERAL OR UNCLASSIFIED**
Includes cracking.

E11-G01 **. Decarboxylation; decarbonylation**
2002
Chain contraction previously coded under E11-B

E11-G02 **. Cracking; other C-C bond fission**
2002
Chain contraction previously coded under E11-B

E11-G03 **. Hydrolysis**
2002

E11-G04 **. De(hydro)halogenation**
2006

E11-G05 **. Dehydration**
Applied where dehydration results in a product formation, e.g. dehydration of ethanol fuel; or manufacture of ethylene by dehydration of ethanol.
2010

E11-G06 **. Dehydroxylation**
Removal of hydroxy / hydroxyl (OH) groups.
2010

E11-G07 **. Deamination**
Removal of amine / amino (NH2, NHR) groups.
2010

E11-G08 **. Desulfurization, desulfonation and desulfation reactions**
Covers desulfurization, desulfonation and desulfation which takes place within the molecule to give a new product.
2014

E11-G09 **. Dealkoxylation**
Removal of alkoxy groups.
2023

E11-H **EXCHANGE REACTIONS – GENERAL OR UNCLASSIFIED**
From 2006 "substitution reactions" have been transferred to E11-F. Prior to 2006 substitution reactions remain searchable in E11-H.

E11-H01 **. Transesterification; ether / acetal exchange**
2002

E11-H02 **. Olefin metathesis**
2006

E11-H03 . **Rearrangement reactions**
Any rearrangement reaction which gives a non-isomeric product e.g. Beckmann rearrangement.
2016

E11-J **ISOMERISATION, RACEMISATION**

E11-J01 . **Isomerisation**
2006

E11-J02 . **Racemisation**
2006

E11-J03 . **Asymmetric synthesis**
2013

E11-K **GENERAL AND OTHER CHEMICAL PROCESSES**

E11-K01 . **Production by combinatorial chemistry**
Applied in addition to other (structural) codes.
2002

E11-K02 . **Apparatus for combinatorial chemistry**
Applied in addition to other (structural) codes.
2002

E11-K03 . **Green Chemistry**
Applied for chemical processes designed to minimize the production of waste by-products and having no side chain reactions. May be used in conjunction with E11-W. See also N07-K01.
2010

PHYSICAL

E11-L **RESOLUTION**

E11-M **FERMENTATION; ENZYME CATALYSIS**

E11-N **ELECTROCHEMICAL, ELECTRIC DISCHARGE**

E11-P **IRRADIATION, PHOTOGRAPHIC**

E11-Q **SEPARATION, REMOVAL, ANALYSIS - GENERAL**
The following are not in order of priority.

E11-Q01 **Separation, extraction, recovery, purification**
1986

E11-Q01A . **Purification by chemical means**
2005

E11-Q01B . **Purification by physical means**
2005

E11-Q01C . **Extraction from natural materials**
Covers chemical compounds extracted from a plant or organism or any other natural materials. Does not include standard lab extraction methods.
2010

E11-Q02 **Removal, effluent treatment**
1986

E11-Q02A . **Engine exhaust treatment**
2005

E11-Q02B . **Industrial effluent treatment**
2005

E11-Q02C . **Other removal, effluent treatment**
2005

E11-Q03 **Analysis, or detection - general**
1986

E11-Q03A . **Mass spectroscopy**
1986

E11-Q03B . **NMR, ESR spectroscopy**
1986

E11-Q03C . **Radio, IR, vis, UV, Raman spectroscopy**
1986

E11-Q03D . **X-ray, gamma-ray**
1986

E11-Q03E . **Chromatography**
1986

E11-Q03F . **Electrophoresis, electrostatics**
1986

E11-Q03G . **Microscopy light, electron**
1986

E11-Q03H . **Sound, ultrasonics**
1986

E11-Q03J . **Polarography, potentiometry, electrolysis**
1986

E11-Q03K . **Radioactivity, isotope**
1986

E11-Q03L . **Colour change (visual)**
1986

E11-Q03M . **Magnetism**
1986

E11-Q03N . **Thermal means**
1986

E11-R **TREATMENT, DYEING, OTHER PHYSICAL PROCESSES - GENERAL**
The following are not in order of priority.

E11-R01 **. Treatment during preparation, manufacture**
1986

E11-R01A **.. by addition of compound**
1986

E11-R01B **.. by physical process, crystallisation**
1986

E11-R02 **. Treatment after preparation, manufacture:**
1986

E11-R02A **.. by grinding, particle size reduction**
1986

E11-R02B **.. by solvent treatment crystallisation, particle size increase**
For crystallisation prior to 198601 search E11-Q.
1986

E11-R02C **.. other**
1986

E11-R03 **. Dyeing**
1986

E11-R04 **. Other physical process**
1986

E11-R04A **.. Allotropism**
e.g from graphite to diamond.
2012

E11-S **STORAGE**
1986

E11-T **VAT RESIDUE, WASTE FROM PRODUCTION**
1994-2009
Retired.

E11-W **ENVIRONMENTALLY FRIENDLY INVENTIONS (COMPOSITIONS / APPLICATIONS)**
Only applied in combination with other chemical manual codes. Reference must be made in the published claims to 'environment(al)' or 'carbon-friendly' benefits or improvement(s) of the novelty. May be used in conjunction with E11-K03. See also N06-G.
2010

E12 PHYSICAL FORM

Apply codes from this section only when the physical form is the main or a key inventive feature.

E12-A **SOLID FORM - GENERAL**
2011

E12-A01 **. Crystalline form**
2011

E12-A02 **. Amorphous form**
The non-crystalline solid state of a typically crystalline solid.
2011

E12-A03 **. Capsule or microcapsule**
2011

E12-A04 **. Film, sheet**
Belt, ribbon, plate, membrane.
2011

E12-A05 **. Coated form**
Apply this code when the novelty is a coated form, e.g. metal with a TiO_2 coating.
2011

E12-A06 **. Pellet**
Includes prill, granule.
2012

E12-A07 **. Powder**
Includes dusting powder.
2012

E12-A08 **. Particles and particulate forms**
2012

E12-A09 **. Moulded articles**
2012

E12-A09A **.. Tablets**
2012

E12-A09B **.. Bars**
2012

E12-A10 **. Foam, expanded/porous forms**
2012

E12-A11 **. Laminate**
2012

E12-A12 **. Whisker, fibre or wire**
Includes needle.
2012

E12-A13 **. Microspheres; spheres**
2012

E12-A14 **. Flakes**
2013

E12-A15 **. Core-shell**
Formulation containing core-shell structure.
2021

E12-B	**Liquid form, semi solid form - general** **2011**	
E12-B01	.	**Ionic liquid** A salt in a liquid state, e.g. alkyl-substituted imidazolium and pyridinium cations, with halide or trihalogenoaluminate anions. **2011**
E12-B02	.	**Solvated form** Includes solution. **2011**
E12-B03	.	**Emulsion** **2011**
E12-B04	.	**Dispersion, suspension** **2011**
E12-B05	.	**Cream, paste** **2011**
E12-B06	.	**Melt (excluding E12-A01)** The liquid form of a substance that is normally solid at room temperature. The transition of matter from a solid state to a liquid state. **2011**
E12-B07	.	**Liquid crystals** **2012**
E12-B08	.	**Gel** **2012**
E12-C	**Gaseous form - general** **2011**	
E12-C01	.	**Aerosol** **2011**
E12-C02	.	**Aerogel** **2014**

E21-E27 ORGANIC DYES AND PIGMENTS (E2)

This section contains organic compounds used as colouring matters, fluorescent brighteners, and their immediate precursors. Each chromophore present is coded and, where necessary, more than one code is applied.

E21 AZO DYES

Includes formazan dyes which are treated as mono-azo dyes.

E21	**General**
E21-A	**WATER-SOLUBLE, CATIONIC**
E21-A	**General**
E21-A01	**monoazo-carbocyclic diazo, carbocyclic coupler**
E21-A02	**as above, but other coupler**
E21-A03	**monoazo-heterocyclic diazo, carbocyclic coupler**
E21-A04	**as above, but other coupler**
E21-A05	**monoazo-cyclic onium type** This code has precedence over codes E21-A01 to E21-A04.
E21-A06	**disazo**
E21-A07	**tris- and polyazo**
E21-B	**WATER-SOLUBLE, NOT CATIONIC**
E21-B	**General**
E21-B01	**metallised-1:1 Cr or Co complex**
E21-B02	**metallised-1:2 Cr or Co complex containing -SO3-**
E21-B03	**metallised-1:2 Cr or Co complex not containing -SO3-**
E21-B04	**Other complex (Cu, Ni etc.)**
E21-B05	**unmetallised-monoazo**
E21-B06	**unmetallised-disazo**
E21-B07	**unmetallised-tris- and polyazo**
E21-C	**WATER INSOLUBLE** For monoazo, code diazo- and coupling- components (according to point of attachment of the azo group). This section includes metal sulfonate pigments.
E21-C	**Water-insoluble azo - general**
E21-C01	**. Water-insoluble, monoazo - general**

E21-C10 **.. monoazo, diazo component - aniline derivative**

E21-C11 **.. monoazo, diazo component - other carbocyclic systems**

E21-C12 **.. monoazo, diazo component - aminothiazole type**
Includes benzthiazoles.

E21-C13 **.. monoazo, diazo component - other heterocyclic system**

E21-C14 **.. monoazo, diazo component - two or more of above types**

E21-C15 **.. monoazo, coupling component - benzene derivative**

E21-C16 **.. monoazo, coupling component - other carbocyclic system**

E21-C17 **.. monoazo, coupling component - heterocyclic**

E21-C18 **.. monoazo, coupling component - miscellaneous**

E21-C19 **.. monoazo, coupling component - two or more of above types**

E21-C02 **. Water-insoluble, disazo - general**
For codes E21-C20 to E21-C23, the definitions of the letters A, D, E, M, and Z are as follows:-
A = diazocomponent (amine)
D = tetraazocomponent (diamine)
E = coupling (end) component
M = middle component (amine and coupling)
Z = double coupling component

E21-C20 **.. disazo-type A –> M –> E**

E21-C21 **.. disazo-type D –> (E)2**

E21-C22 **.. disazo-type A –> Z <– A**

E21-C23 **.. Disazo-other**
Includes condensed.

E21-C03 **. Water-insoluble tris(poly)azo**

E21-D **REACTIVE**
Not coded in E21-A/B/C. Use all relevant codes between E21-D01 and E21-D09 as appropriate.

E21-D **General**

E21-D01 **Reactive system - triazine type**

E21-D02 **Reactive system - other heterocyclic**

E21-D03 **Reactive system - labile group linked by SO2 (NR)**

E21-D04 **Reactive system - other systems**

E21-D05 **Chromophore - metallised monoazo Cu, Ni complex**

E21-D06 **Chromophore - metallised dis- and polyazo Cu, Ni complex**

E21-D07 **Chromophore - other metal complex**

E21-D08 **Chromophore - unmetallised monoazo**

E21-D09 **Chromophore - unmetallised dis- and polyazo**

E21-E **DIAZONIUM COMPOUND**

E21-E **General**

E22 ANTHRAQUINONE DYES

Includes anthraquinone intermediates (which are also coded in section (**E1**)), compounds containing a condensed anthraquinone ring system, and extended quinones of more than two fused rings.

E22	**General**
E22-A	**WATER-SOLUBLE, CATIONIC**
E22-A	**General**
E22-B	**WATER-SOLUBLE, NOT CATIONIC**
E22-B	**General**
E22-B01	**1-2 substituents**
E22-B02	**3 substituents**
E22-B03	**4 substituents**
E22-B04	**5 substituents**
E22-B05	**6-8 substituents**
E22-C	**WATER-INSOLUBLE**
E22-C	**General**
E22-C01	**0-2 substituents**
E22-C02	**3 substituents**
E22-C03	**4 substituents**
E22-C04	**5 substituents**
E22-C05	**6-8 substituents**
E22-D	**REACTIVE** **Not** coded in E22-A/B/C.
E22-D	**General**
E22-D01	**1-2 substituents**
E22-D02	**3 substituents**
E22-D03	**4 substituents**
E22-D04	**5 substituents**
E22-D05	**6-8 substituents**
E22-E	**POLYCYCLIC OTHER THAN ANTHRAQUINONE**
E22-E	**General**
E22-E01	**3-4 rings** Includes derivatives of anthraquinone function.
E22-E02	**5-7 rings**
E22-E03	**8 or more rings**

E23 PHTHALOCYANINE (MACROCYCLIC) DYES

E23	**General**
E23-A	**WATER-SOLUBLE**
E23-A	**General**
E23-A01	**Reactive**
E23-A02	**Non-reactive**
E23-B	**WATER-INSOLUBLE**
E23-B	**General**

E24 SPECIAL CLASSES OF DYES

E24 **General**

E24-A **FLUORESCENT BRIGHTENERS AND DYES**

E24-A **General**

E24-A01 **Stilbene type**
1970-2001
Now coded as: E24-A04A (brighteners); E24-A05 (dyes)

E24-A02 **Coumarin or benzoxazole type**
1970-2001
Now coded as: E24-A04B (brighteners); E24-A05 (dyes)

E24-A03 **Other type**
1970-2001
Now coded as: E24-A04C (brighteners); E24-A05 (dyes)

E24-A04 **Fluorescent Brighteners, general**
2002
Previously coded under: E24-A

E24-A04A **. Stilbene type**
2002
Previously coded under: E24-A01

E24-A04B **. Coumarin or benzoxazole type**
2002
Previously coded under: E24-A02

E24-A04C **. Other type**
2002
Previously coded under: E24-A03

E24-A05 **Fluorescent Dyes**
2002
Previously coded under: E24-A:

E24-A06 **Luminescent dyes - general**
2005

E24-A06A **. Luminescent compounds containing metal**
2005

E24-A06B **. Luminescent heterocyclics**
2005

E24-A06C **. Other luminescent compounds**
2005

E24-B **POLYMERISED AND POLYCONDENSED DYES, AND PRECURSORS**

E24-B **General**
Also code the monomer in section (**E2**)

E24-C **MIXED CHROMOPHORES**

E24-C **General**
Also code constituent dye chromophores in their appropriate groups.

E24-D **(NEAR) INFRA-RED DYES**

E24-D **General**
Also code chromophores in their appropriate groups.
2002

E24-E **UV ABSORBERS**
Note: Only coded in E2 section when UV Absorber is coloured.

E24-E **General**
Also code chromophores in their appropriate groups.
2002

E24-U **NANOSTRUCTURES**
Note: Defines the structure of the substrate, not the form of the dye or pigment.

E24-U **Dye or pigment bound to nanostructure**
The dye or pigment bound to the nanostructure may be coded separately.
2010

E25 GENERAL AND OTHER DYES

E25 **Dyes and pigments - general**

E25-A **Nitro, nitroso**

E25-A **General**

E25-B **METHINE, STYRYL**

E25-B **General**

E25-B01 **Methine dye used as electrophotographic charge transport agent**
1994
Previous code(s): E25-B

E25-B02 **Methine dye used in a silver halide photosensitive photographic composition**
e.g. as photosensitiser or antihalation dye.
1994
Previous code(s): E25-B

E25-B03 **Other dyes and pigments**
1994
Previous code(s): E25-B

E25-C **AZAMETHINE**
Includes =N-

E25-C **General**

E25-D **TRI- AND DI-ARYLMETHANE**

E25-D **General**

E25-E **OTHER TYPES - GENERAL**
In order of priority: E25-E01 > E25-E02 > E25-E03.

E25-E **General**

E25-E01 **Ring(s) containing N**
1986

E25-E02 **Ring(s) containing O**
1986

E25-E03 **Other types of dyes and pigments**
1986

E25-F **NATURAL DYE OF UNKNOWN STRUCTURE**
1994

E25-F **General**
1994

E25-G **REACTIVE DYE GENERAL**
Includes reactive dyes without any specific chromophore and may also be applied with other codes for general classes of reactive dyes.
2021

E26 DYE PRECURSORS EXCLUDING E21-E, E24-B

Includes coupling components, colour couplers, oxidation bases, leuco bases; and photo-, thermo-, piezo- or halo- chromic compounds. Compounds coded here should also receive appropriate section (**E1**) codes.

E26 **General**

E26-A **COUPLERS**

E26-A **General**
1975

E26-A01 **Azo**
1986

E26-A02 **Condensation: photographic**
1986

E26-A03 **Condensation: other; oxidation; other**
1986

E26-B **LACTONES, LACTAMS, SULTONES, SULTAMS, PHOTOCHROMICS, SPIROPYRANS**
1975

E26-B **General**

E26-C **OTHER DYE PRECURSORS**
1975

E26-C **General**

E27 DYE FORMULATIONS; MORPHOLOGY

Inventions relating to formulations or specific forms/modifications of known dyes and pigments are coded here from 2002. Includes processes where modifying or treating the chromophore is key to the invention. Where appropriate, codes for the individual chromophores are additionally applied.

E27-A	**FORMULATIONS**
E27-A	**General** **2002**
E27-A01	**Pigment formulation** **2002**
E27-A02	**Dyestuff formulation** **2002**
E27-B	**MORPHOLOGY** Indexed where specific shape or form, or process for treating chromophore is claimed or key to the invention. **2002**
E27-B	**General** **2002**
E27-B01	**Pigments** **2002**
E27-B01A	**. Pigments morphology (nano-form)** Applied where specific shape or form of pigment is specified as a nano-form. **2010**
E27-B02	**Dyestuffs** **2002**
E27-B02A	**. Dyes morphology (nano-form)** Applied where specific shape or form of dye is specified as a nano-form. **2010**
E27-B03	**Other morphology (general)** **2002**
E27-B03A	**. Other chromophores morphology (nano-form)** Applied where specific shape or form of non-dye, non-pigment chromophore is specified as a nano-form. **2010**

E31-E35 INORGANIC CHEMISTRY (E3)

In general, the overall priority is:-

E35 > 34 > 33 > 32 > 31

However, the following rules should also be noted.

1. Code E31-E (peroxide) has priority over all other section (E3) codes.
2. Code E32-B (cyanogen and derivatives) has priority over E33, 34 and E35.
3. Within each of E32, E33, E34 and E35 all appropriate codes are assigned.
4. Within E31, a compound is given the last code letter, while within the subdivisions of these the first appropriate code is applied.

   E31-E > E31-Q > E31-P >–> E31-K > E31-J > –> E31-A

   while E31-P06B > E31-P06C

   and E31-Q02 > E31-Q04
5. E31 has priority over E32, E33, E34, E35 for ammonium, cyanogen and metal derivatives of:- hydrides (metals only) (E31-A+) oxyacids of halogens (E31-C) hyposulfite, polythionate/ite (E31-F+) thiosulfate (E31-F+) compounds of Se, Te (E31-G) amide, azide, imide (E31-H+) nitride, nitrite, nitrosyl (E31-H+) oxyacids of P, phosphide (E31-K+) compounds of As (E31-L) and Sb (E31-M) carbides (E31-N+) compounds of Si (E31-P+) compounds of B (E31-Q+)
6. E31 has priority over E33, E34 for sulphides of:- alkali metal, Mg, Ca, Sr, Ba (E31-F+).

Note

1. Specific isotopes and radioactive inorganic compounds of elements not naturally radioactive so are coded in section (**E3**) with the addition of code E05-R

E31 NON-METALLIC ELEMENTS, METALLOIDS AND COMPOUNDS

This general code is used for vague disclosures such as Non-metallic elements and their compounds or if five or more E31 codes would apply.

E31	**General**
E31-A	**HYDROGEN, METAL HYDRIDE, WATER - GENERAL** Excludes H of acids.
E31-A01	**H2 + CO** **1986**
E31-A02	**H2 production, storage** **1986**
E31-A02A	**. By electrical method** **2005**
E31-A02B	**. Storage** **2005**
E31-A02C	**. Other H2 production, storage** **2005**
E31-A03	**H2 use, detection, removal** **1986**
E31-A04	**metal hydride** **1986**
E31-A05	**water, other** **1986**
E31-B	**HALOGEN (X), X ACID AND HALIDE (HAL) - GENERAL**
E31-B01	**Electrical production of X** Includes electrolyte and apparatus. **1975**
E31-B02	**production of X by other methods, production of HX or inter-X compound** **1975**
E31-B02A	**. F, Br, I element production** **2005**
E31-B02B	**. Cl element production** **2005**
E31-B02C	**. F, Br, I compound production** **2005**
E31-B02D	**. Cl compound production** **2005**
E31-B03	**use of X or compound containing X - general** For oxy X compound see E31-C. **1975**
E31-B03A	**. F, Br, I element** **1986**
E31-B03B	**. Cl element** **1986**
E31-B03C	**. F, Br, I compound** **1986**
E31-B03D	**. Cl compound** **1986**
E31-C	**OXIDE OR OXYACID OF HALOGEN, INCLUDING SALTS** Oxide or oxyacid of halogen, including salts.
E31-D	**OXYGEN, OZONE; OXIDE - GENERAL**
E31-D01	**O2 production, storage** Oxygen or oxygen ion production or storage. **1986**
E31-D02	**O2 use, detection, removal** **1986**
E31-D03	**O3 ; activated oxygen etc.** **1986**
E31-D04	**oxide** **1986**
E31-D05	**Hydroxide ion** Includes hydroxide ion and active species such as hydroxy radical. **2005**
E31-E	**PEROXIDE, PERACID; SALTS THEREOF** N.B. has priority over all other section (**E3**) codes.
E31-E01	**Hydrogen peroxide** **2005**
E31-E02	**Percarbonate** **2005**
E31-E03	**Persulfate** **2005**
E31-E04	**Perborate** **2005**
E31-E05	**Other inorganic peroxides** Includes superoxides as well as pernitrates, perphosphates and metal peroxides. **2005**
E31-F	**SULFUR; COMPOUND THEREOF - GENERAL**
E31-F01	**Removal of S compound(s) from wastes etc., optionally with recovery of S values (general)** One of the E11-Q02 codes must be applied as well whenever this code or one of its sub-divisions (E31-F01A – E31-F01C) is applied. Always try to apply one of the more specific codes in preference to this one. **1975**

E31-F01A . **removal of S oxide**
1986

E31-F01B . **removal of S hydride**
1986

E31-F01C . **removal of other S compound**
1986

E31-F02 **production of S, H2S (or salts), polysulfide**
Excludes E31-F01.
1975

E31-F03 **production of other S compound**
1975

E31-F04 **Use of elemental sulfur, (poly)sulfide or oxide of S**
Includes complex oxides.
1975

E31-F05 **Use of other S compound**
Includes S oxyacid.
1975

E31-G **SELENIUM (SE) OR TELLURIUM (TE) OR COMPOUND THEREOF**

E31-H **NITROGEN, COMPOUND THEREOF GENERAL**

E31-H01 **Removal of nitrogen oxides from waste gases etc. catalytically**
1977

E31-H02 **Other methods for removing N oxides from waste gases etc.**
1977

E31-H03 **Elemental N; compound containing halogen and/or sulfur**
1977

E31-H04 **Production of other N compound**
Nitride, metal nitride.
1977

E31-H05 **Use of other N compound**
Nitride, metal nitride.
1977

E31-J **NOBLE GAS (OR COMPOUND)**

E31-K **PHOSPHORUS OR COMPOUND THEREOF - GENERAL**

E31-K01 **catalyst containing P (or compound)**
1975

E31-K02 **H3PO4 (optionally some polyphosphoric acid) production**
1975

E31-K03 **orthophosphate (optionally some polyphosphate) - production**
1975

E31-K04 **P; other P compound - production**
Includes polyphosphates, thiophosphates and thiopolyphosphates.
1975

E31-K05 **Orthophosphate use - general**
Includes acid and P heteropolyacid.
1975

E31-K05A . **orthophosphoric acid**
1986

E31-K05B . **counterion is metal from Section 35**
1986

E31-K05C . **counterion is metal from Section 34**
1986

E31-K05D . **counterion is metal from Section 33**
1986

E31-K05E . **counterion is ion from Section 32, 31 or is organic**
1986

E31-K06 **Polyphosphate, use**
Includes meta.
1975

E31-K07 **P; other P compound, use**
Includes polyphosphates, thiophosphates and thiopolyphosphates.
1975

E31-L **ARSENIC OR COMPOUND THEREOF**

E31-M **ANTIMONY COMPOUND**

E31-N **CARBON OR COMPOUND THEREOF - GENERAL**

E31-N01 **C fibre production**
1975

E31-N02 **C modification**
Includes C fibre graphitisation.
1975

E31-N03 **C production**
Includes diamonds.
1975

E31-N03A . **Diamond, cubic C**
2005

E31-N03B . **Graphite (other) pyrolytic**
Not C fiber graphitisation- E31-N02
2005

E31-N03C . **Active**
2005

E31-N03D . **Inert**
2005

E31-N04 **use of C - general**
e.g. as purifier, catalyst.
1975

E31-N04A . **diamond, cubic C**
1986

E31-N04B . **graphite, (other) pyrolytic**
1986

E31-N04C . **other form of C, active**
1986

E31-N04D . **other form of C, inert**
1986

E31-N04E . **C, fibre, use**
Includes active and inert forms.
2012

E31-N05 **compound of C - general**
See E31-A for CO with H2 mixtures.
1975

E31-N05A . **metal carbide**
1986

E31-N05B . **(thio) CO, carbonyl compound**
For metal carbonyls see code for metal.
1986

E31-N05B1 .. **Carbon monoxide**
2005

E31-N05B2 .. **Other (thio)carbonyl compounds**
2005

E31-N05C . **CO2**
Includes carbonic acid.
1986

E31-N05D . **other C compound**
1986

E31-P **SILICON OR COMPOUND THEREOF- GENERAL**

E31-P01 **production and/or modification of silica or hydrate**
1975

E31-P02 **mixture of silica and alumina (may be chemically combined) - general**
1975

E31-P02A . **zeolite production**
1986

E31-P02B . **zeolite use**
1986

E31-P02C . **non-zeolite production**
1986

E31-P02D . **non-zeolite use**
1986

E31-P03 **use of silica, other than mixture with alumina**
1975

E31-P04 **fluorosilicate; silicate mineral (other than +Al)**
1975

E31-P05 **other silicate - general**
1975

E31-P05A . **non alkali(ne earth) metal present**
1986

E31-P05B . **alkaline earth metal present**
1986

E31-P05C . **alkali metal present**
1986

E31-P05D . **other silicate**
1986

E31-P06 **Silicon; other Si compound – general**
Three or more codes roll up.
1975

E31-P06A . **Si element**
1986

E31-P06B . **Si halide, hydride**
1986

E31-P06C . **Si carbide**
1986

E31-P06D . **Si nitride**
1986

E31-P06E . **other Si compound**
1986

E31-Q **BORON; COMPOUND THEREOF - GENERAL**
Three or more roll up.

E31-Q01 **B element**
1986

E31-Q02 **B halide, hydride**
1986

E31-Q03 **B carbide, nitride, metal boride**
1986

E31-Q04 **B oxide**
1986

E31-Q05 **B acid**
1986

E31-Q06 **Alkali metal borate**
Borate: from B-O acid.
1986

E31-Q07 **Other borate**
Borate: from B-O acid.
1986

E31-Q08 **Other B compound**
Borate: from B-O acid. BF4- is coded E31-Q02.
1986

E31-U	**INORGANIC NANOSTRUCTURES** Used in conjunction with E3* codes **2005**
E31-U01	**Nanoparticles, nanospheres** **2006**
E31-U02	**Nanotubes, nanorods, nanowires** Includes nanowhiskers. **2006**
E31-U03	**Nanofilms** Includes nanobelt, nanoribbon, nanoplate. **2006**
E31-U04	**Other nano-forms (e.g. nano-buds, nano-horns)** Includes nano-clusters and nano-capsules. **2011**
E31-V	**QUANTUM DOTS OR QUANTUM CLUSTERS** Quantum dots are nanocrystals of a semiconducting material used mostly in LEDs and solid state lighting, displays and photovoltaic devices. **2014**

E32 AMMONIA, CYANOGEN AND COMPOUNDS

E32	**General**
E32-A	**AMMONIA, OR AMMONIUM COMPOUND - GENERAL**
E32-A01	**NH3 production** **1986**
E32-A02	**NH3 use** **1986**
E32-A03	**NH4+ compound production** **1986**
E32-A04	**NH4+ compound use** **1986**
E32-A05	**other compound** **1986**
E32-B	**CYANOGEN AND DERIVATIVES** Includes all metal cyanides, (thio)cyanates and cyanamides. N.B. has priority over E33, 34, 35.

E33 ALKALI METAL COMPOUNDS

E33 **General**

E33-A **OXIDE OR HYDROXIDE OF SODIUM/POTASSIUM (NA/K) - GENERAL**

E33-A01 **Sodium/potassium (Na/K) hydroxide production by electrical means**
1986

E33-A02 **Sodium/potassium (Na/K) hydroxide production by other means**
1986

E33-A03 **Sodium/potassium (Na/K) hydroxide use**
1986

E33-A04 **Sodium/potassium (Na/K) oxide**
1986

E33-B **HALIDE OF SODIUM/POTASSIUM (NA/K)**

E33-C **SULFATE OR SULFITE OF SODIUM/POTASSIUM (NA/K)**
Includes hydrogen sulfate/hydrogen sulfite.

E33-D **CARBONATE OF SODIUM/POTASSIUM (NA/K)**
Includes hydrogencarbonate

E33-E **NITRATE OF SODIUM/POTASSIUM (NA/K)**

E33-F **OTHER COMPOUND OF SODIUM/POTASSIUM (NA/K)**

E33-G **LITHIUM (LI) COMPOUND**

E33-H **RUBIDIUM (RB) OR CESIUM (CS) COMPOUND**

E33-S **GENERAL SODIUM/POTASSIUM (NA/K) SALT**
Previous code(s) : E33-A
2006

E34 COMPOUNDS of Be, Mg, Al, Ca, Sr, Ba, Ra, Th, RARE EARTHS

E34 **General**

E34-A **BERYLLIUM (BE) COMPOUND**

E34-B **MAGNESIUM (MG) COMPOUND-GENERAL**

E34-B01 **Magnesium (Mg) oxide**
1986

E34-B02 **Magnesium (Mg) hydroxide, carbonate, basic compound**
1986

E34-B03 **Magnesium (Mg) halide, sulfate**
1986

E34-B04 **Other magnesium (Mg) compound**
For sulfide (derivative) code E31-F+.
1986

E34-C **ALUMINIUM (AL) COMPOUND - GENERAL**

E34-C01 **Aluminium (Al) (hydr)oxide production**
1975

E34-C02 **Aluminium (Al) (hydr)oxide use**
For alumina/silica see E31-P02.
1975

E34-C03 **Other Aluminium (Al) compound**
1975

E34-D **CALCIUM (CA), STRONTIUM (SR) OR BARIUM (BA) COMPOUND - GENERAL**

E34-D01 **Calcium (Ca) (hydr)oxide**
1975

E34-D02 **Calcium (Ca) sulfate, halide**
Includes basic.
1975

E34-D03 **Other calcium (Ca) compounds; strontium (Sr) or barium (Ba) compounds**
For sulfide (derivative) code E31-F+.
1975

E34-D03A **. Calcium carbonate**
2005

E34-D03B **. Other calcium compounds**
2005

E34-D03C **. Strontium compounds**
2005

E34-D03D . **Barium compounds** 2005

E34-D04 **Calcium - general**
Applied only to vague references to inorganic calcium compounds. 2011

E34-E **SC, Y, LANTHANOID, RA, OR TH COMPOUND**

E34-E01 **Scandium (Sc), yttrium (Y), lanthanum (La)** 2006

E34-E02 **Lanthanides - general** 2006

E34-E02A . **Cerium** 2006

E34-E02B . **Other Lanthanide compounds** 2006

E34-E03 **Radium (Ra), thorium (Th)** 2006

E35 COMPOUNDS OF OTHER METALS

E35 **GENERAL**

E35-A **Copper (Cu) compound**

E35-B **Silver (Ag), gold (Au) compound**

E35-C **Zinc (Zn) compound - general**

E35-C01 . **Zinc (hydr)oxide production** 2006

E35-C02 . **Zinc (hydr)oxide use** 2006

E35-C03 . **Zinc halide, sulfate** 2006

E35-C04 . **Other Zinc (Zn) compound** 2006

E35-D **Cadmium (Cd) compound**

E35-E **Mercury (Hg) compound**

E35-F **Gallium (Ga), indium (In), thallium (Tl) compound**

E35-G **Germanium (Ge) compound**

E35-H **Tin (Sn) compound**

E35-J **Lead (Pb) compound**

E35-K **Titanium (Ti) compound - general**

E35-K01 . **Titanium dioxide (TiO2) production** 1986

E35-K02 . **Titanium dioxide (TiO2) use** 1986

E35-K03 . **Titanium (Ti) halide, sulfate** 1986

E35-K04 . **other Titanium (Ti) compound** 1986

E35-L **Zirconium (Zr), hafnium (Hf) compound**

E35-M **Bismuth (Bi) compound**

E35-N **Vanadium (V), niobium (Nb), tantalum (Ta) compound**

E35-P **Chromium (Cr) compound**

E35-Q **Molybdenum (Mo), tungsten (W) compound**

E35-R **Polonium (Po), uranium (U), trans-U compound**

E35-S **Manganese (Mn) compound**

E35-T **Rhenium (Re) compound**

E35-U **Iron (Fe) compound - general**

E35-U01 . **Iron (Fe) oxide production**
Includes ferrite. 1986

E35-U02 **. Iron (Fe) oxide use**
Includes ferrite.
1986

E35-U03 **. Iron (Fe) hydroxide, mixed oxide-hydroxide**
1986

E35-U04 **. Iron (Fe) halide, sulfate**
1986

E35-U05 **. other Iron (Fe) compound**
1986

E35-V **Cobalt (Co) compound**

E35-W **Nickel (Ni) compound**

E35-X **Rhodium (Rh), palladium (Pd), osmium (Os), iridium (Ir), platinum (Pt) compound**

E35-Y **Other metal compound (Tc, At, Fr, Ac, Pa)**

F:
TEXTILES, PAPER, CELLULOSE

F01 Natural/Synthetic Threads/Fibres
F02 Fabrics and their Production
F03 Treatment of Fabric Products
F04 Textile Applications
F05 Paper and Wood

F: TEXTILES, PAPER, CELLULOSE

Code commenced 197001.

F01 NATURAL/SYNTHETIC THREADS/FIBRES

F01-A **MECHANICAL TREATMENT OF NATURAL MATERIAL TO OBTAIN FIBRES OR FILAMENTS**

F01-A01 **Of animal fibres**
Including cocoon handling and unwinding.

F01-A02 **Of vegetable fibres**
Including scutching, ginning.

F01-A03 **Of mineral fibres**
Prior to 1971 no specific code was available.
1971

F01-B **CHEMICAL TREATMENT OF NATURAL MATERIAL TO OBTAIN FILAMENTS OR FIBRES FOR SPINNING**

F01-B01 **Of animal fibres**
Including carbonising rags to recover fibres.

F01-B02 **Of vegetable fibres**
Including retting.

F01-C **MECHANICAL METHODS AND EQUIPMENT IN MANUFACTURE OF SYNTHETIC FILAMENTS, THREADS, FIBRES, BRISTLES OR RIBBONS**

F01-C01 **Equipment**
Including spinnerettes, die plates, manifolds and distributors, pumps.

F01-C02 **Dry spinning (evaporative)**
1970-1993

F01-C03 **Melt spinning**
1970-1993

F01-C04 **Wet spinning (coagulative)**
1970-1993

F01-C05 **Fibrillation**

F01-C06 **Drawing**
Including draw texturing (with F01-H04+). Prior to 1971 see F01-C.
1971

F01-C07 **Other fibre production (other than by spinning or fibrillation)**
Including emulsion spinning, centrifugal spinning, flash extrusion of plexifilaments and glass fibre production. Prior to 1971 see F01-C.
1972

F01-C07A . **Melt blowing**
1994
Previous code(s): F01-C07

F01-C07B . **Flash extrusion**
1994
Previous code(s): F01-C07

F01-C07C . **Fibrid production**
1994
Previous code(s): F01-C07

F01-C07D . **Synthetic pulp production**
1994
Previous code(s): F01-C07

F01-C07E . **Glass fibre production**
1994
Previous code(s): F01-C07

F01-C08 **Spinning general**
1994
Previous code(s): F01-C+

F01-C08A . **Dry spinning**
1994
Previous code(s): F01-C02

F01-C08B . **Melt spinning**
1994
Previous code(s): F01-C03

F01-C08B1 .. **High speed**
1994
Previous code(s): F01-C03

F01-C08C . **Wet spinning (coagulative)**
Includes Dry-Wet spinning.
1994
Previous code(s): F01-C04

F01-C **Other mechanical methods/equipment in manufacture of synthetic filaments, fibres, or ribbons**
e.g. cooling, quenching, freezing, annealing of extruded filaments.

F01-D **CHEMICAL FEATURES IN MANUFACTURE OF SYNTHETIC FILAMENTS, THREADS, FIBRES, BRISTLES OR RIBBONS**
Including polymer production or chemical modification; chemical structure of polymers and additives used in bulk of polymer.

F01-D01 **Cellulose ester fibres**
e.g. cellulose (di-,tri-) acetate.

F01-D02 **Acrylic and modacrylic fibres**
i.e. acrylonitrile or methacrylonitrile (co)polymers. For acrylic ester polymers see F01-D08.

F01-D03 **Polyamide fibres, nylons**
Including nylon 6 (poly-caproamide); nylon 6:6; aromatic polyamides (aramids); polyesteramides (with F01-D04).

F01-D03A **. Wholly aliphatic polyamides**
1994
Previous code(s): F01-D03

F01-D03B **. Aromatic polyamides**
Includes aromatic polyamides containing aliphatic groups.
1994
Previous code(s): F01-D03

F01-D04 **Polyester, polycarbonate fibres**
Including polybutylene terephthalate (PBT); linear polyesters; polyesteramides (with F01-D03); polyetheresters (with F01-D10). For polyethylene terephthalate see F01-D04A.

F01-D04A **. Polyethylene terephthalate (PET)**
1994
Previous code(s): F01-D04

F01-D05 **Polyolefin fibres**
Including polyethylene, polypropylene.

F01-D06 **Regenerated cellulose, rayon, polynosic fibres**

F01-D06A **. By viscose process**
1994
Previous code(s): F01-D06

F01-D06B **. By cuprammonium process**
1994
Previous code(s): F1-D06

F01-D06C **. By other specific process**
1994
Previous code(s): F01-D06

F01-D07 **Polyurethane fibres**
e.g. Spandex, Lycra®.

F01-D08 **Vinyl fibres**
Including polyvinyl chloride (PVC), polyvinyl alcohol; excluding fluorine containing resins for which see F01-D10.

F01-D09 **Inorganic and metallic; asbestos**

F01-D09A **. Carbon; graphite fibres**
To be searched for the production of these fibres.
1971

F01-D09A1 **.. Derived from pitch**
1994
Previous code(s): F01-D09A

F01-D09A2 **.. Derived from polyacrylonitrile (co)polymers**
1994

F01-D09A3 **.. Derived from other specific precursor(s)**
1994
Previous code(s): F01-D09A

F01-D09B **. Glass fibres**
Prior to 1970 see F01-D09
1971

F01-D10 **Other fibres**
Including fluorocarbon, phenoplast, proteinaceous.

F01-D **Chemical features in general**
e.g. additions to spinning solutions or melts.

F01-E **PHYSICAL CHARACTERISTICS OF FIBRES**

F01-E01 **Conjugate, general**
Including sea-island, side-by-side, sheath-core.

F01-E01A **. Crimped conjugate**
Prior to 1970 see F01-E01.
1972

F01-E02 **Non-circular, tapered**
Including trilobal, lobed, thick and thin (variable denier) and plexifilaments.

F01-E03 **Hollow**

F01-E04 **Textured**
Excluding F01-E01A; e.g. crimped, bulked.

F01-E05 **Monofilament**
1994
Previous code(s): F01-E

F01-E06 **Microdenier yarns**
1994
Previous code(s): F01-E

F01-E07 **Mixed filament yarns**
Core-sheath yarns.
1994
Previous code(s): F01-E

F01-E08 **Variable denier yarns**
1994
Previous code(s): F01-E

F01-E09 **Staple yarn/fibres**
1994
Previous code(s): F01-E

F01-E09A **. Fibrefill (batts, fibreballs, clusters)**
1994
Previous code(s): F01-E

F01-E **Other physical characteristics of fibres**
Including slub yarn, knop yarn, nub yarn, sewing threads (with F02-F01). For spandex see F01-D07.

F01-F **PRELIMINARY TREATMENT OF FIBRES**
e.g. for spinning.

F01-F01 **Carding, combing, hackling**
Prior to 1971 see F01-F.
1971

F01-F02 **Drafting, sliver drawing**
Prior to 1971 see F01-F.
1971

F01-F03 **Opening, bale breaking**
Prior to 1972 see F01-F.
1972

F01-F04 **Feeding of slivers**
1994
Previous code(s): F01-F

F01-F **Other preliminary treatment**
e.g. blending, stapling.

F01-G **SPINNING PROCESSES AND EQUIPMENT**

F01-G00G **General spinning and equipment**
Indexed for generic and unspecified cases.
1994
Previous code(s): F01-G

F01-G01 **Ring spinning**

F01-G02 **Ringless spinning**
e.g. flyer, cap, mule.

F01-G03 **Converter processing**

F01-G04 **Automated spinning systems**

F01-G05 **Open-end spinning, break spinning**
Prior to 1972 see F01-G.
1972

F01-G **Other spinning processes and equipment**
Including electrostatic.

F01-H **MECHANICAL FINISHING OF FIBRES, FILAMENTS, THREADS, YARNS OR ROPES**

F01-H01 **Twisting, false twisting, plying, cabling, doubling, stranding**
Including in production of ropes and cables.

F01-H02 **Entangling, intermingling, interlacing, differential turbulence and other 'zero twist' processes**
e.g. air jet.

F01-H03 **Winding, reeling, packaging**

F01-H03A **. Bobbins, sleeves, tubes, cops, cartons**
Prior to 1971 see F01-H03.
1971

F01-H03B **. Break detection, end joining, length metering**
e.g. knotting, splicing. Prior to 1971 see F01-H03.
1971

F01-H03C **. Bobbin and cop handling**
e.g. doffing, donning, aligning, transporting. Prior to 1971 see F01-H03.
1971

F01-H03D **. Package formation, winding, coiling**
Prior to 1972 see F01-H03.
1972

F01-H03D1 **.. Transfer tails**
1994
Previous code(s): F01-H03D

F01-H03D2 **.. Thread traversing guides**
1994
Previous code(s): F01-H03D

F01-H03E **. Waste removal from cores**
1994
Previous code(s): F01-H03

F01-H04 **Crimping, curling, texturing, bulking**

F01-H04A **. Stuffer-box crimping**

F01-H04B **. False twisting**

F01-H04C **. Other crimping or curling**
e.g. knit-deknit (with F02-B03+); gear wheel processes.

F01-H04C1 **.. Yarns textured by drawing only**
1994
Previous code(s): F01-H04C

F01-H04C2 **.. Jet crimping**
1994
Previous code(s): F01-H04C

F01-H05 **Heat treatment, setting, conditioning, shrinking, relaxing, annealing**
Including crimp development with heating (with F01-H04+).

F01-H06 **Finishing or dressing of fibres, general**
Including lubrication, spin finishes.

F01-H06A **. Sizing of fibres**
Prior to 1972 see F01-H06.
1972

F01-H06B **. Increasing adhesion of fibres to bulk materials**
e.g. resins, concrete. Prior to 1986 see F01-H06 in conjunction with F03-D.
1986

F01-H07 **Thread guides**
1994
Previous code(s): F01-H03

F01-H08 **Tension devices**
1994
Previous code(s): F01-H

F01-H09 **Yarn cleaners**
1994
Previous code(s): F01-H

F01-H **Other mechanical finishing of fibres, filaments, threads, yarns or ropes**
Including testing and identification of fibres and filaments.

F01-J **OTHER FIBROUS FORMS**
1994

F01-J01 **Fibrids**
1994

F01-J02 **Synthetic pulps**
1994

F01-J **Other fibrous forms**
1994

F02 FABRICS AND THEIR PRODUCTION

F02-A **WEAVING**

F02-A01 **Warping, beaming, leasing, let-off**

F02-A02 **Shedding mechanisms; patterns (cards, designing); dobbys, jacquard systems, healds, heddles**

F02-A03 **Woven fabrics**

F02-A03A **. Of specified application**
Including carpets. Prior to 1972 see F02-A03.
1972

F02-A04 **Methods of weaving, looms**

F02-A04A **. Conventional**

F02-A04B **. Shuttleless**
e.g. water jet, air jet, rapier, weft gripper looms.

F02-A05 **Auxiliary weaving apparatus, weavers' tools, shuttles**
Prior to 1971 see F02-A04.
1971

F02-B **KNITTING**

F02-B01 **Patterns (cards, designing); control mechanisms**

F02-B02 **Knit fabrics**
Including throw rugs.

F02-B03 **Methods of knitting; knitting machines**

F02-B03A **. Warp knitting**

F02-B03B **. Weft knitting**

F02-B04 **Accessories for knitting machines**
Including feed devices, take-off devices. Prior to 1971 see F02-B03.
1971

F02-C **NON-WOVEN FABRICS**

F02-C01 **Non-woven fabrics, felts, blankets, battings, waddings, stuffings**

F02-C01A **. Non-woven pile fabrics**
1994
Previous code(s): F02-C01

F02-C01B1 **.. Self-bonded non-woven fabrics**
1994
Previous code(s): F02-C01

F02-C01B2 **.. Self-bonded non-woven fabrics where the binder is of the same composition as the fibre**
1994
Previous code(s): F02-C01

F02-C01C **. Adhesive bonded non-woven fabric using adhesives or binders**
2005

F02-C02 **Methods of manufacture; machinery, general**
Including wet laying; dry laying; spin bonding (with F01-C+).

F02-C02A **. Stitch-bonding**

F02-C02B **. Bonding of fibrous webs**

F02-C02B1 **.. Using an adhesive**
Prior to 1972 see F02-C02B.
1972

F02-C02C **. Felting**

F02-C02D **. Needling, punching**

F02-C02E **. Wet laying**
2005

F02-C02F **. Spunlacing, hydroentangling**
2005

F02-C02G **. Air laying**
2005

F02-D **TUFTING AND TUFTED PRODUCTS**

F02-D **Tufting and tufted products**
Including carpets.

F02-E **BRAIDING, LACE, TRIMMINGS, NETS**

F02-E01 **Braiding, plaiting and manufacture of lace including bobbin; net or carbonised lace; braiding machines; braid lace**

F02-E02 **Trimmings; ribbons (including typewriter and computer), tapes, bands, narrow fabric; other webbing**

F02-E03 **Making nets; making knotted carpets or tapestries; macrame; other knotting**

F02-F **SEWING, EMBROIDERING**

F02-F01 **Sewing, general**
Including sewing threads (with F01-E).

F02-F01A **. Sewing specific goods, general**
Prior to 1971 see F02-F01.
1971

F02-F01A1 **.. Sewing fasteners**
Including slide fasteners, button (holes). Prior to 1986 see F02-F01A.
1986

F02-F01B **. Sewing accessories, general**
Prior to 1972 see F02-F01.
1972

F02-F01B1 **.. Control devices, programs, microcomputers**
Prior to 1986 see F02-F01B.
1986

F02-F01B2 **.. Feed or removal of cloth or work-pieces, trimming, cutting of threads**
Prior to 1986 see F02-F01B.
1986

F02-F02 **Embroidering**

F02-G **PHYSICAL CHARACTERISTICS OF FABRICS**
1994

F02-G01 **General**
1994

F02-G02 **Crepe fabrics**
1994

F02-G03 **Pile fabrics**
See also non-woven pile fabrics F02-C01A.
1994

F02-G04 **Stretch fabrics**
1994

F02-G04A **. Due to fibres**
1994

F02-G04B **. Due to fabric structure**
1994

F02-G **Physical characteristics of fabrics, other**
1994

F03 TREATMENT OF FABRIC PRODUCTS

F03-A **MECHANICAL TREATMENT**

F03-A01 **Calendering, pleating, forming**

F03-A02 **Stretching, drying, setting, decatising, stentering, tentering, mechanical shrinkproofing and stabilisation, relaxing**

F03-A **Other mechanical treatment of fabric products**
e.g. shearing, napping, raising, singeing.

F03-B **BLEACHING AND BLEACHING AGENTS; SCOURING, DESIZING, MERCERISING, OPTICAL BLEACHING**

F03-B01 **Bleaching, optical bleaching**

F03-B **Other treatment of fabric products - scouring, desizing, mercerising, optical bleaching**

F03-C **CHEMICAL TREATMENT**

F03-C01 **Equipment**

F03-C02 **Repellents and retardants, general**
Including oil and soil.

F03-C02A . **Water proofing, rain proofing, hydrophobisation**
Prior to 1972 see F03-C02.
1972

F03-C02B . **Biological repellents**
e.g. bactericides, germicides, insecticides, rot proofing. Prior to 1972 see F03-C02.
1972

F03-C03 **Flame proofing; fire retardants; melt proofing**

F03-C03A . **Phosphorus containing material**
Prior to 1977 see F03-C03.
1977

F03-C03B . **Antimony containing material**
Prior to 1977 see F03-C03.
1977

F03-C03C . **Material containing halogen**
Prior to 1977 see F03-C03.
1977

F03-C04 **Durable press, wash-wear, crease-proofing, anti-pilling, shrinkproofing, dimensional stabilisation using resins or additives**

F03-C05 **Antistats, softeners, surfactants, processing aids, hygroscopic treatments**

F03-C06 **To improve dye receptiveness**
Prior to 1977 see F03-C.
1977

F03-C07 **To improve resistance of textiles to ageing**
e.g. by air, light and heat. Prior to 1977 see F03-C.
1977

F03-C08 **Dissolving/degrading fibres to remove them or to improve properties such as drape**
e.g. (partial) hydrolysis of polyester fibres with alkali. Prior to 1986 see F03-C in conjunction with F03-A.
1986

F03-C09 **Odorants, deodorants**
2005

F03-C **Other chemical treatment of fabric products**

F03-D **LAMINATING AND COMPOSITES**

F03-D01 **Adhesive laminating**

F03-D02 **Flame laminating**

F03-D03 **Other laminating**
Including flocking. Prior to 1971 see F03-D.
1971

F03-D04 **Fabric structures designed for reinforcement of solid materials**
Such as plastics, concrete, metal. Prior to 1986 see F03-D.
1986

F03-D **Composites; reinforced materials, general**

F03-E **TREATMENT NOT COVERED ELSEWHERE**

F03-E01 **By coating**
Prior to 1972 see F03-E.
1972

F03-E02 **Recycling, recovery**
1994
Previous code(s): F03-E

F03-E **Other treatment of fabric products not covered elsewhere**
Including waste-water, recovering textile materials.

F03-F **DYEING AND/OR PRINTING**
Formerly: Dyes and dyeing textiles etc.

F03-F **General dyeing processes**
Applied from the start of CPI (1970) to the end of 1985 and was discontinued. From the start of 1986 see F03-F33.
1970-1985

F03-F01 **Equipment**

F03-F02 **Animal substrates**
e.g. silk, wool. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F03 **Vegetable substrates**
e.g. cotton, linen. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F04 **Cellulose esters**
Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F05 **Acrylic and modacrylic**
Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F06 **Polyamide or Nylon**
Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F06A . **Azo dyes, water soluble**
Prior to 1977 see F03-F06.
1977

F03-F06B . **Azo dyes, water insoluble**
Prior to 1977 see F03-F06.
1977

F03-F06C . **Anthraquinone dyes**
Prior to 1977 see F03-F06.
1977

F03-F07 **Polyester**
Including polycarbonate. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F07A . **Azo dyes, water soluble**
Prior to 1977 see F03-F07.
1977

F03-F07B . **Azo dyes, water insoluble**
Prior to 1977 see F03-F07.
1977

F03-F07C . **Anthraquinone dyes**
Prior to 1977 see F03-F07.
1977

F03-F08 **Polyolefin**
Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F09 **Regenerated cellulose**
Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F10 **Polyurethane**
e.g. spandex. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F11 **Vinyl**
e.g. PVC, PVA. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F12 **Inorganic and metallic**
Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.

F03-F13 **Solvent dyeing, general**
Prior to 1971 no specific code was available; see codes for appropriate substrate.
1971

F03-F13A . **Of cotton, regenerated cellulose**
Prior to 1971 no specific code was available; see codes for appropriate substrate.
1971

F03-F13B . **Of other substrates**
Prior to 1971 no specific code was available; see codes for appropriate substrate.
1971

F03-F14 **After treatment of coloured substrates**
Prior to 1972 no specific code was available.
1972

F03-F15 **Other substrates**
Prior to 1972 see F03-F. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.
1972

F03-F16 **Dyes of general application**
Prior to 1972 see F03-F. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.
1972

F03-F16A . **Azo dyes, water soluble**
Prior to 1977 see F03-F16. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.
1977

F03-F16B . **Azo dyes, water insoluble**
Prior to 1977 see F03-F16. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.
1977

F03-F16C . **Anthraquinone dyes**
Prior to 1977 see F03-F16. Prior to 1986 this code retrieves only references to dyeing. For printing prior to 1986 see F03-G.
1977

F03-F17 **With pigments and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F18 **With disperse dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F19 **With reactive dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F20 **With direct dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F21 **With anionic/acid dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F22 **With cationic/basic dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F23 **With vat/leuco dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F24 **With sulfur dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F25 **With metal complex dyes and associated materials/compositions**
Prior to 1986 no specific code was available; see codes for appropriate substrate.
1986

F03-F26 **Dyeing/printing using compositions in the form of foams**
Prior to 1986 see F03-F or F03-G.
1986

F03-F27 **Transfer dyeing/printing; sublimation printing**
Including decalcomanias. Prior to 1986 see F03-G.
1986

F03-F28 **Discharge or resist dyeing/printing**
Prior to 1986 see F03-G.
1986

F03-F29 **Cop dyeing, cheese dyeing, warp dyeing or printing**
Prior to 1986 see F03-F or F03-G.
1986

F03-F30 **Spin dyeing or bulk dyeing before fibre formation**
Prior to 1986 see the appropriate substrate code from F03-F+ in conjunction with the appropriate code F01-D+.
1986

F03-F31 **Other specific dyeing/printing processes**
Prior to 1986 see F03-F or F03-G.
1986

F03-F32 **Dyeing auxiliaries**
Excluding dye receptiveness improving agents for which see F03-C06; solvents, dyes. Prior to 1986 no specific code was available.
1986

F03-F33 **General dyeing/printing**
Prior to 1986 see F03-F or F03-G.
1986

F03-G **PRINTING**

F03-G **Printing**
Applied from the start of CPI (1970) to the end of 1985 and was discontinued. From the start of 1986 see F03-F+.
1970-1985

F03-H **DECORATING TEXTILES, QUILTING**

F03-H **Decorating textiles; quilting**
Including metallising.

F03-J **LAUNDERING, DRY CLEANING**

F03-J01 **Washing machines**
Including (spin)driers. Prior to 1977 see F03-J.
1977

F03-J02 **Ironing; smoothing**
Prior to 1977 see F03-J.
1977

F03-J03 **Laundering compositions**
e.g. detergents. Prior to 1977 see F03-J.
1977

F03-J04 **Dry cleaning**
Prior to 1977 see F03-J.
1977

F03-J **General**

F03-K **OTHER PROCESSES AND EQUIPMENT**

F03-K01 **Web handling, rolling, laying, widening**
Prior to 1971 see F03-K.
1971

F03-K02 **Analysis, inspection, testing, identification**
Prior to 1971 see F03-K.
1971

F03-K03 **Cutting, severing**
1994
Previous code(s): F03-K

F03-K **Other miscellaneous fibre or fabric processes and equipment**
Including marketing, joining fabric lengths, general air conditioning of textile factories.

F04 TEXTILE APPLICATIONS

F04-A **ROPES, CABLES**

F04-A **Ropes, cables**
Including metal wires.

F04-B **ARTIFICIAL LEATHER, WALL, FLOOR COVERING**

F04-B01 **Artificial leather, oil cloth, suede**

F04-B01A . **With polyurethane**

F04-B01B . **With polyvinyl chloride**

F04-B02 **Roofing felt, linoleum, (vinyl) floor covering**

F04-B03 **Artificial fur**
Prior to 1986 see F04-B in conjunction with F04-C and F04-D.
1986

F04-B **Other flexible sheet material**
Including tarpaulins.

F04-C **WEARING APPAREL**

F04-C01 **Underwear; baby linen (including diapers); handkerchiefs; foundation garments; pantyhose and tights**
With F04-C02.

F04-C01A . **Baby linen**
Including diapers and baby training pants.
2005

F04-C02 **Hosiery, socks, stockings, pantyhose and tights**
With F04-C01.

F04-C03 **Outerwear**
Including coats, jackets, shirts, skirts, dresses, jumpers.

F04-C04 **Garment fastenings, suspenders, slide fasteners, buttons and button holes, belts**

F04-C05 **Accessories**
e.g. hats, footwear.

F04-C05A . **Footwear**
2005

F04-C06 **Protective clothing**
1994
Previous code(s): F04-C+

F04-C **General**
Including garment linings and interlinings. Prior to 1971 no specific code was available.
1971

F04-D **HOME FURNISHINGS**

F04-D01 **Sheets, blankets, bed linen**

F04-D02 **Table linen, tablecloths**

F04-D03 **Draperies and upholstery, curtains**

F04-D04 **Carpets**
1994
Previous code(s): F04-D

F04-D **Home furnishings, general**
Including towels. Prior to 1971 no specific code was available.
1971

F04-E **INDUSTRIAL FABRICS AND PRODUCTS**

F04-E01 **Tyre cord, chafer fabric**

F04-E02 **Military**
Including parachutes, camouflage.

F04-E03 **Automotive**
Including seats, upholstery.

F04-E03A **. Airbags**
1994
Previous code(s): F04-E03

F04-E03B **. Safety belts**
1994
Previous code(s): F04-E03

F04-E03C **. Seats, upholstery**
1994
Previous code(s): F04-E03

F04-E04 **Surgical and medical products**
Including prostheses, sutures, dialysis, bandages, dressings.

F04-E05 **Filter material, general**
Including cigarette filters. Prior to 1971 see F04-E.
1971

F04-E05A **. Paper making machine felts, belts, Fourdrinier wires**
Prior to 1986 see F04-E05.
1986

F04-E06 **Thermal and acoustic insulation**
Prior to 1972 see F04-E.
1972

F04-E07 **Belts**
Prior to 1972 see F04-E.
1972

F04-E **Other industrial fabrics and products**
Including hose and ion-exchange fibres.

F04-F **FABRICATION OF FABRIC PRODUCTS**

F04-F01 **Cutting fabric and other processes in making clothes**
Including hats, slide fasteners, button holes.

F04-F02 **Manufacturing footwear**

F04-F03 **Manufacturing other fabric products**

F04-F04 **Labelling, packaging**

F04-G **PRODUCTS MADE OF FIBRES OTHER THAN FABRICS**

F04-G01 **Optical fibres, cables**
For structures of fibres see F01-E01. Prior to 1986 see F04-G in conjunction with F01-E01.
1986

F04-G **Other products made of fibres other than fabrics**
Including brushes, fishing lines, edible products, gut for racquets, artificial seaweed for preventing erosion. Prior to 1971 no specific code was available.
1971

F05 PAPER AND WOOD

F05-A **PAPER MAKING, CELLULOSE, FIBRE-BOARD**

F05-A01 **Fibrous raw material (and mechanical treatment)**

F05-A02 **Production of cellulose by removing non-cellulosic substances**

F05-A02A **. Pretreatment before digesting; pulping**
Prior to 1971 see F05-A02.
1971

F05-A02B **. Pulp after-treatment, working up waste paper, other processes, bleaching of pulp**
Prior to 1971 see F05-A02.
1971

F05-A02C **. Regeneration of pulp liquors, use of residues, treatment of waste water**
Prior to 1971 see F05-A02.
1971

F05-A03 **Treatment of digested materials before passing to the paper-making machine; adding substances to the web on the machine**
Including methods of beating; mechanical purification, screening.

F05-A04 **Paper-making and machines**

F05-A04A **. Wet end of machines, general**
Including head boxes. Prior to 1971 see F05-A04.
1971

F05-A04B **. Wet end, dewatering**
Prior to 1971 see F05-A04.
1971

F05-A04C **. Transfer wet to press, press section, drier section, other machine details**
Prior to 1971 see F05-A04.
1971

F05-A04D **. Complete machines, processes for making paper, cardboard**
e.g. corrugated, blotting. Prior to 1971 see F05-A04.
1971

F05-A04E **. Sterilization and cleaning of equipment**
Including general air conditioning of paper factories, dust removal etc.
2005

F05-A05 **Calenders, doctors, accessories for paper making machines; testing paper; winding up paper**

F05-A05A **. Testing paper**
Including equipment.
2005

F05-A05B **. Embossing, stamping and forming**
Including equipment.
2005

F05-A06 **Cardboard, paper manufacture not covered elsewhere; paper compositions and auxiliary materials; special paper or cardboard types**
Including those prepared from basically non-cellulosic compositions

F05-A06A **. Multiply materials**
Including corrugated cardboard. Prior to 1971 see F05-A06.
1971

F05-A06A1 **.. Corrugated cardboard/paper**
2005

F05-A06A2 **.. Multiply tissue and wipes**
2005

F05-A06B **. Paper, cardboard by applying coatings**
Including adhesives and surface sizing. Prior to 1971 see F05-A06.
1971

F05-A06C **. Paper, cardboard by adding polymers, resins**
Prior to 1971 see F05-A06.
1971

F05-A06D **. Paper, cardboard by adding (in)organic compounds**
Including dyes and optical brighteners. Prior to 1971 see F05-A06.
1971

F05-A06E **. Cardboard or paper prepared from basically non-cellulosic compositions**
Prior to 1986 see F05-A06.
1986

F05-A07 **Fibreboard, chipboard, manufacture of articles from fibrous cellulosic suspensions or papier-mache**
e.g. disposable diapers.

F05-B	**PRESERVATION AND TREATMENT OF WOOD**
F05-B01	**Preservation** Including fungicide, insecticide, germicide. Prior to 1971 no specific code was available. **1971**
F05-B	**Plywood; other treatment** Including staining, dyeing, bleaching, drying, flame proofing. Prior to 1971 no specific code was available. **1971**

G: PRINTING, COATING, PHOTOGRAPHIC

G01 Non-fibrous Inorganic Pigments, Fillers
G02 Coatings, Paints, Inks, Natural Resins, Polishes
G03 Adhesives
G04 Miscellaneous Compositions and Applications
G05 Printing
G06 Photographic Materials and Processes

G: PRINTING, COATING, PHOTOGRAPHIC

Code commenced 197001.

G01 NON-FIBROUS INORGANIC PIGMENTS, FILLERS

G01-A **PREPARATION, TREATMENT OR COMPOSITIONS OF SPECIFIC PIGMENTS, FILLERS**
When a pigment or filler contains more than one of the elements below, it is searchable using all the relevant codes.

G01-A01 **Alkaline earth metal compounds**

G01-A02 **Zinc compounds**

G01-A03 **Cadmium compounds**

G01-A04 **Lead compounds**

G01-A05 **Iron compounds**

G01-A06 **Silicon compounds**
Excluding clays, for which see G01-A10.

G01-A07 **Chromium compounds**

G01-A08 **Titanium compounds**

G01-A09 **Mercury compounds**

G01-A10 **Aluminum compounds**
Including clays.

G01-A11 **Carbon type**

G01-A12 **Metallic, general**

G01-A12A **. Aluminum (alloy) powders, flakes**
Prior to 1986 see G01-A12.
1986

G01-A13 **Cobalt, nickel and copper compounds**
2005

G01-A14 **Vanadium, molybdenum and tungsten compounds**
2005

G01-A15 **Rare earth metal compounds**
2005

G01-A16 **Antimony, tin and indium compounds**
2005

G01-A **Other preparation, treatment or compositions of specific pigments, fillers**

G01-B **TREATMENT TO ENHANCE PROPERTIES OF INORGANIC PIGMENTS AND FILLERS**

G01-B **General treatment to enhance properties**
Applied from 1970 to the end of 1985 and was then discontinued.
1970-1985

G01-B01 **Physical treatment**
e.g. grinding, microwave. Prior to 1986 see G01-B.
1986

G01-B02 **Inorganic treatment**
Prior to 1986 see G01-B.
1986

G01-B03 **Organic treatment**
Including with polymer. Prior to 1986 see G01-B.
1986

G01-C **MULTICOMPONENT OR COMPOSITE PIGMENTS (CONTAINING AT LEAST ONE INORGANIC COMPONENT)**
2005

G02 COATINGS, PAINTS, INKS, NATURAL RESINS, POLISHES

G02-A **PAINTS, VARNISHES, LACQUERS, INKS, PENCIL LEADS, CRAYONS, OTHER COATINGS**

G02-A01 **Paints, varnishes, lacquers based on inorganic film formers**

G02-A01A **. Silicone based**
Prior to 1972 see G02-A01.
1972

G02-A02 **Paints, varnishes, lacquers based on organic film formers**

G02-A02A **. Natural polymers**

G02-A02B **. Synthetic polymers, general**
Excluding silicone polymers, for which see G02-A01A.

G02-A02B1 **.. Addition polymer based paint**
Indexed for the generic case.
1994
Previous code(s): G02-A02C, G02-A02D

G02-A02B2 **.. Condensation polymer based paint**
Indexed for the generic case.
1994
Previous code(s): G02-A02B

G02-A02C **. Acrylics, general**
Prior to 1972 see G02-A02B.
1972

G02-A02C1 **.. Containing epoxy groups**
Prior to 1977 see G02-A02C.
1977

G02-A02C2 **.. Hydroxyalkyl acrylates**
Prior to 1977 see G02-A02C.
1977

G02-A02C3 **.. Aminoalkyl acrylates**
Prior to 1977 see G02-A02C.
1977

G02-A02C4 **.. Acrylic nitriles, acids, amides, di- and polyacrylates**
Excluding acrylated resins, for which see the appropriate unmodified resin. Prior to 1986 see G02-A02C.
1986

G02-A02D **. Other vinyls and addition polymers**
Prior to 1972 see G02-A02B.
1972

G02-A02D1 **.. From diene or polyene monomers**
Excluding di- and poly- acrylates, for which see G02-A02C4. Prior to 1977 see G02-A02D.
1977

G02-A02D2 **.. Vinyl halide polymers**
Prior to 1977 see G02-A02D.
1977

G02-A02D3 **.. From vinyl carboxylates or unsaturated acids other than acrylics**
Or derivatives e.g. anhydride or ester. Prior to 1977 see G02-A02D.
1977

G02-A02D4 **.. Polymers from other unsaturated aromatics**
e.g. styrenes. Prior to 1977 see G02-A02D.
1977

G02-A02E **. Polyesters**
Including alkyds. Prior to 1972 see G02-A02B.
1972

G02-A02F **. Phenoplasts, aminoplasts**
Prior to 1972 see G02-A02B.
1972

G02-A02G **. Epoxy resins.**
Prior to 1972 see G02-A02B.
1972

G02-A02H **. Polyurethanes**
Prior to 1972 see G02-A02B.
1972

G02-A03 **Additives for paints, varnishes, lacquers**

G02-A03A **. Organic pigment**
Prior to 1972 see G02-A03.
1972

G02-A03B **. Antifouling additives**
Prior to 1977 see G02-A03.
1977

G02-A03C **. Paint and ink removers, correcting fluids**
Prior to 1977 see G02-A03.
1977

G02-A03D **. Inorganic pigment for paint**
1994
Previous code(s): G02-A03

G02-A04 **Printing and writing inks; pencil leads, crayons, general**

G02-A04A **. Inks**
Prior to 1977 see G02-A04.
1977

G02-A04B **. Dyes and pigments for inks, crayons**
Prior to 1977 see G02-A04.
1977

G02-A05 **Other coating compositions**
Prior to 1971 no specific code was available.
1971

G02-A05A **. For wire**
Including electrical conductors and cables. Prior to 1977 see G02-A05.
1977

G02-A05B **. For other electrical or magnetic material**
Prior to 1977 see G02-A05.
1977

G02-A05B1 **.. For magnetic recording materials**
For magneto-optical layers see also G06-D07.
1994
Previous code(s): G02-A05B

G02-A05C **. Paper coatings**
Prior to 1977 see G02-A05.
1977

G02-A05D **. Non-stick, release and fire-proof coatings**
Prior to 1977 see G02-A05.
1977

G02-A05E **. Corrosion-resistant coatings for metal; primers**
Prior to 1977 see G02-A05.
1977

G02-A05F **. Coatings for concrete, masonry, walls, (including water proofing for these substrates); road paints; traffic sign paints**
Prior to 1977 see G02-A05.
1977

G02-A05G **. Antifouling coatings**
1994
Previous code(s): G02-A05

G02-A05H **. Coatings on optical fibres**
1994
Previous code(s): G02-A05

G02-A05J **. Anti-graffiti coatings**
1994
Previous code(s): G02-A05

G02-A05K **. Coatings for glass**
(excluding G02-A05H) e.g. scratch resistance, anti-reflective, IR or UV absorption.
2005

G02-A06 **Painting processes with no specific paint**
1994

G02-A06A **. Paint spray booth cleaning/maintenance**
1994

G02-A07 **Shape and form of coatings**
2006

G02-A07A **. Powder coatings**
2006

G02-A07A1 **.. In slurry form**
2006

G02-B **NATURAL RESINS, DRIERS, FRENCH POLISH**

G02-B01 **Obtaining, purification, and chemical modification of natural resins**
e.g. oleo-resins.

G02-B02 **Obtaining spirits of turpentine**

G02-B03 **Obtaining, purifying and chemical modification of drying oils**

G02-B04 **Driers (siccatives)**

G02-B05 **Preparation of French polish**

G02-C **OTHER POLISHING COMPOSITIONS, SKI WAXES**

G02-C **Other polishing compositions; ski waxes**

G03 ADHESIVES

Macromolecular adhesives, other than glue or compositions based on them are classified in Section A, but their use for adhesive purposes is also classified here.

G03-A **GLUE, GELATIN**

G03-A **Glue; gelatin**

G03-B **OTHER ADHESIVES, GENERAL ADHESIVE PROCESSES**

G03-B01 **Inorganic**
Including silicone resins.

G03-B02 **Organic**

G03-B02A **. Natural polymers**
Excluding glue or gelatin, for which see G03-A and excluding rubber, for which see G03-B02B.

G03-B02B **. Natural or synthetic rubbers**

G03-B02C **. Synthetic polymers, general**

G03-B02D **. Synthetic polymers, addition**
Prior to 1971 see G03-B02C.
1971

G03-B02D1 **.. Acrylic polymers**
Prior to 1977 see G03-B02D.
1977

G03-B02D2 **.. Polymers from vinyl halides or vinyl carboxylates**
Prior to 1977 see G03-B02D.
1977

G03-B02D3 **.. Styrene polymers (optionally substituted); polymers from olefinic hydrocarbons**
Prior to 1977 see G03-B02D.
1977

G03-B02E **. Synthetic polymers, condensation**
Prior to 1971 see G03-B02C.
1971

G03-B02E1 **.. Aminoplasts, phenoplasts**
Prior to 1977 see G03-B02E.
1977

G03-B02E2 **.. Epoxy resins**
Prior to 1977 see G03-B02E.
1977

G03-B02E3 **.. Polyesters**
Prior to 1977 see G03-B02E.
1977

G03-B02E4 **.. Polyurethanes; polyureas; other isocyanate resin-based adhesives**
Prior to 1977 see G03-B02E.
1977

G03-B03 **Adhesive processes, general**

G03-B04 **Adhesive compositions in the form of film or foils; adhesive tape**
e.g. on carriers.

G04 MISCELLANEOUS COMPOSITIONS AND APPLICATIONS

G04-A **LUMINESCENT OR TENEBRESCENT MATERIALS**

G04-A01 **Photochromic or tenebrescent materials**
1994
Previous code(s): G04-A

G04-A **Luminescent materials; phosphor compositions**

G04-B **OTHER COMPOSITIONS, USES IN OTHER PROCESSES**

G04-B01 **Materials for heat transfer or for producing differences in temperature other than by combustion; antifreeze**
e.g. by change in physical state.

G04-B01A **. Halogen containing refrigerants**
Prior to 2008 see G04-B01.
2008

G04-B01A1 **.. Refrigerants containing fluorine as the only halogen**
Prior to 2008 see G04-B01.
2008

G04-B01A2 **.. Refrigerants containing both fluorine and chlorine**
Prior to 2008 see G04-B01.
2008

G04-B01A3 **.. Fluoroether refrigerants**
Prior to 2008 see G04-B01.
2008

G04-B01B **. Hydrocarbon refrigerants**
Prior to 2008 see G04-B01.
2008

G04-B01C **. CO_2 as refrigerant**
Prior to 2008 see G04-B01.
2008

G04-B01E **. Other specific chemicals as refrigerants**
Prior to 2008 see G04-B01.
2008

G04-B01F **. Refrigerant compositions or blends containing 2 or more refrigerants**
Prior to 2008 see G04-B01.
2008

G04-B02 **Materials for sealing and packing joints or covers**

G04-B03 **Antistatic**
Other than in Section A and G06-A03.

G04-B04 **Antislip; abrasive**
Other than in Section A.

G04-B05 **De-icing and de-misting**

G04-B06 **Fire-proofing**
Other than in Section A or F.

G04-B07 **Aerosol compositions**

G04-B08 **Degreasing, cleaning, scouring and bleaching**
Other than in Section D or F. Prior to 1972 see G04-B.
1972

G04-B09 **Flaw detection (including defectoscopy) and temperature sensitive compositions**
Prior to 1972 see G04-B.
1972

G04-B **Other compositions**
Including liquid crystals.

G05 PRINTING

G05-A **PRINTING PLATES**

G05-A **General**

G05-A01 **Lithographic (planographic)**

G05-A02 **Letterpress and deep relief (inc. flexographic)**

G05-A03 **Intaglio (gravure)**

G05-A04 **Stencils**

G05-B **PHOTOSENSITIVE RESISTS**
1970-1993

G05-B **Photosensitive resists**
1970-1993

G05-C **COLOUR PROOFING**

G05-C **Colour proofing**

G05-D **PRESSURE SENSITIVE COPYING MATERIALS**

G05-D **Pressure sensitive copying materials**
Prior to 1971 no specific code was available.
1971

G05-E **NON-RADIATION SENSITIVE COPYING MATERIALS**

G05-E **Non-radiation sensitive copying materials**
Including electrolytic recording. Prior to 1971 no specific code was available.
1971

G05-F **OTHER PRINTING MATERIALS AND PROCESSES**

G05-F01 **Decalcomanias, transfers, transfer compositions**
Prior to 1986 see G05-F.
1986

G05-F02 **Thermal heads**
1994
Previous code(s): G05-F

G05-F03 **Ink jets/ink jet printing**
For inks used in ink-jet printing see G02-A04+.
1994
Previous code(s): G05-F

G05-F **Other printing materials and processes**
Including magnetography; cleaning printing plates. Prior to 1971 no specific code was available.
1971

G06 PHOTOGRAPHIC MATERIALS AND PROCESSES

G06-A **NON-SENSITIVE AGENTS AND LAYERS**

G06-A01 **Subbing**

G06-A02 **Antihalation**
Including filters, screening dyes.

G06-A02A **. Anti-reflective layer**
2005

G06-A03 **Antistatic**

G06-A04 **Receiving**
Including nucleating, nuclei.

G06-A05 **Stripping, release**

G06-A06 **Binders**
Prior to 1971 see G06-A.
1971

G06-A07 **Electrically conductive layers for electrophotography**
Prior to 1972 see G06-A.
1972

G06-A08 **Barrier, protective, scratch resistant layers**
Prior to 1986 see G06-A.
1986

G06-A09 **Intensifying screens, conversion screens, storage phosphors for X-ray materials**
Prior to 1986 see G06-A in conjunction with G04-A, G06-D01 and G06-H07.
1986

G06-A10 **Intermediate layer**
Indexed where the function of the layer is unspecified.
1994
Previous code(s): G06-A

G06-A11 **Reflective layer**
1994
Previous code(s): G06-A

G06-A12 **Magnetic layer**
See also G02-A05B1.
1994
Previous code(s): G06-A

G06-A13 **Dielectric layer**
1994
Previous code(s): G06-A

G06-A **Other layers**
Including carrier, timing and anti-curl layers.

G06-B **SUPPORTS**

G06-B01 **Polymeric**

G06-B02 **Paper**

G06-B03 **Metal**

G06-B **Other supports**
e.g. glass.

G06-C **PHOTOSENSITIVE SYSTEMS BY TYPE**

G06-C01 **Photosensitive layers having an incorporated coupler**

G06-C02 **Kodachrome type colour materials**
i.e. soluble coupler reacts with oxidised developer to form insoluble dye.

G06-C03 **Dye destruction colour materials**
e.g. silver dye bleach materials.

G06-C04 **Electrophotographic colour materials**

G06-C05 **Direct positive materials**

G06-C06 **Print-out materials**
Including ablative systems.

G06-C07 **Photodevelopable or direct-print materials**

G06-C08 **Heat developable, photosensitive materials**

G06-C09 **Multicolour diffusion transfer materials**

G06-C09A . **Multicolour dye release diffusion transfer materials**
Where e.g. existing dyestuffs attached to ballast groups are released during development for diffusion. Prior to 1986 see G06-C09 in conjunction with G06-G10 and G06-G14.
1986

G06-C10 **Single colour diffusion transfer materials**

G06-C10A . **Single colour dye release diffusion transfer materials**
Where e.g. existing dyestuffs attached to ballast groups are released during development for diffusion. Prior to 1986 see G06-C10 in conjunction with G06-G01 and G06-G04.
1986

G06-C11 **Colloid transfer materials**

G06-C12 **Imbibition dye transfer systems**

G06-C13 **Additive colour systems**

G06-C14 **Elements with several (electro)-photographically active layers**
e.g. multilayer colour-sensitive systems, or multilayer electro-photographic systems. Prior to 1986 no specific code was available.
1986

G06-C14A . **Red sensitive layer**
Prior to 1986 no specific code was available.
1986

G06-C14B . **Blue sensitive layer**
Prior to 1986 no specific code was available.
1986

G06-C14C . **Green sensitive layer**
Prior to 1986 no specific code was available.
1986

G06-C15 **Releasing photographically active components on processing, other than dyestuffs**
Prior to 1986 no specific code was available for this concept. See the codes for the individual active components released.
1986

G06-C16 **Microencapsulated photosensitive systems**
1994
Previous code(s): G06-C

G06-C **Other systems and materials**
Including vesicular; systems with light induced adhesiveness developed by toning.

G06-D **APPLICATIONS**

G06-D01 **X-ray materials**

G06-D02 **Lithographic films, papers (high contrast)**

G06-D03 **Direct electron recording**

G06-D04 **Photoresists**
Excluding G06-D05+, G06-D06.

G06-D05 **Production of printing plates**
Prior to 1971 see G06-D.
1971

G06-D05A . **Electrophotographically**
Prior to 1986 see G06-D05.
1986

G06-D06 **Production of electrical elements**
Prior to 1971 see G06-D.
1971

G06-D06A . **Circuits and circuit components**
e.g. semiconductors
2005

G06-D06B . **Optoelectronic**
e.g. LCD, optical filters,wave guides.
2005

G06-D07 **Optical storage media**
Including optical discs, laser recording discs and magneto-optical discs. Prior to 1986 see G06-D.
1986

G06-D **Other applications**
Including microfilms, cine-sound tracks, identity cards; holograms (with G06-E).

G06-E **SPECIAL TECHNIQUES**

G06-E01 **Screening (half tones)**

G06-E02 **Masking**

G06-E03 **In-camera processing**
Including integral film packs, e.g. 'Polaroid'®.

G06-E04 **Coating**

G06-E05 **Drying**
Including during manufacture.

G06-E **Other special photographic techniques**
Including holograms (with G06-D); silver recovery; packaging of photographic materials.

G06-F **RADIATION SENSITIVE SYSTEMS**
i.e. element in systems.

G06-F01 **Silver halide**

G06-F01A . **Silver halide tabular grain emulsion**
1994
Previous code(s): G06-F01

G06-F01B . **Silver halide core-shell emulsion**
1994
Previous code(s): G06-F01

G06-F02 **Diazo**

G06-F03 **Polymeric**

G06-F03A . **Photoconductors**
Prior to 1977 see G06-F03 in conjunction with G06-F06.
1977

G06-F03B . **Radiation-sensitive composition containing monomer**
Prior to 1977 see G06-F03.
1977

G06-F03C . **Radiation-sensitive composition containing polymer**
Prior to 1977 see G06-F03.
1977

G06-F03D . **Additives**
e.g. photosensitisers. Prior to 1977 see G06-F03.
1977

G06-F04 **Non-silver metals and their compounds**

G06-F05 **Radiation-sensitive dyes**

G06-F06 **Organic photoconductors, charge generators, charge transport materials**

G06-F07 **Inorganic photoconductors, charge generators, charge transport materials**

G06-F07A . **ZnO or Selenium**
Including selenium alloys or compounds. Prior to 1972 see G06-F07.
1972

G06-F08 **Heat sensitive**
Including thermographic and infra-red systems.

G06-F08A . **Containing novel active materials**
Such as (leuco) dyes, couplers, chromogenic compounds (colour formers), electron donors, electron acceptors. Prior to 1986 see G06-F08.
1986

G06-F **Other radiation sensitive systems**
Including silver salts other than halide.

G06-G **PROCESSING AGENTS AND STEPS**
Black and white silver halide processing.

G06-G01 **Developing**

G06-G02 **Fixing**

G06-G03 **Stabilisation processing**

G06-G04 **Other processing steps**
Electrophotographic.

G06-G05 **Dry toning**

G06-G05A . **Dry toning composition**
2005

G06-G05B . **Substrates for electrophotographic printing**
2005

G06-G06 **Liquid toning**

G06-G07 **Charging**

G06-G08 **Other processing steps**

G06-G08A . **Imaging methods**
Including deformation of thermoplastic layers, electrophoretic compositions. Prior to 1972 see G06-G08.
1972

G06-G08B . **Toner transfer processes**
Prior to 1986 see G06-G08.
1986

G06-G08C . **Fusing, fixing processes**
Prior to 1986 see G06-G08.
1986

G06-G08D . **Charge transfer, latent image transfer processes**
Prior to 1986 see G06-G08.
1986

G06-G08E . **Cleaning processes**
2005

G06-G09 **Diazo processing (including ammonia vapour)**
Colour silver halide processing.

G06-G10 **Development**

G06-G11 **Bleaching**

G06-G12 **Fixing**

G06-G13 **Stabilisation processing**

G06-G14 **Other steps**

G06-G15 **Monobath processing**

G06-G16 **Reversal processing (two development steps give direct positive image)**

G06-G17 **Development of photosensitive resin systems**
Prior to 1986 see G06-G.
1986

G06-G18 **Image formation by exposure to ionising radiation, light etc.**
Prior to 1986 no specific code was available.
1986

G06-G **Other photographic processing agents and steps**

G06-H **PHOTOGRAPHIC AGENTS**

G06-H01 **Chemical sensitisers**

G06-H02 **Fungicides, bactericides**

G06-H03 **Antifoggants, emulsion/developer stabilisers**

G06-H04 **Covering power increasing agents**

G06-H05 **Image toners (non-electrophotographic)**

G06-H06 **Desensitisers**
Including electron acceptors.

G06-H07 **Spectral (optical) sensitisers**

G06-H07A . **Cyanines**

G06-H07B . **Merocyanines (neutrocyanine)**

G06-H07C . **Oxanols**

G06-H07D . **Pyrylium types**

G06-H08 **Couplers**

G06-H08A . **Phenolic (naphtholic)**

G06-H08B . **Pyrazolones**

G06-H08C . **Keto-methylene types**

G06-H08D . **Pyrazolotriazole couplers**
1994
Previous code(s): G06-H08

G06-H09 **Brighteners**

G06-H09A . **Oxazoles**

G06-H09B . **Stilbenes**

G06-H09C . **Coumarins**

G06-H09D . **Thiazoles**

G06-H10 **Mordants**

G06-H11 **Image stabilisers**

G06-H12 **Development accelerators**

G06-H13 **Development restrainers**

G06-H14 **Hardeners (used for anti-hardeners, crosslinking agents)**

G06-H15 **Plasticisers**

G06-H16 **Matting agents**

G06-H17 **Lubricants**

G06-H18 **Coating aids**

G06-H19 **Other specific agents**
Including materials such as solvents for incorporation of incompatible (e.g. hydrophobic) agents in photographic compositions or layers. Prior to 1986 see G06-H.
1986

G06-H **Miscellaneous materials of unspecified photographic use**

H: PETROLEUM

H01 Crude Oil and Natural Gas
H02 Unit Operations
H03 Transportation and Storage
H04 Petroleum Processing
H05 Refinery Engineering
H06 Gaseous and Liquid Fuels
H07 Lubricants and Lubrication
H08 Other Petroleum Products
H09 Fuels not of Petroleum Origin

H: PETROLEUM

Code commenced at CPI Week 197001.

H01 CRUDE OIL AND NATURAL GAS

H01-A **EXPLORATION**

H01-A01 **Geological; geophysical**
E.g. seismic exploration

H01-A01A **. Seismic surveying**
For exploration prior to well drilling. For well logging see H01-A02
2006

H01-A02 **Well logging, general**

H01-A02A **. Electric/magnetic logging**
Include NMR logging
1986

H01-A02B **. Radioactive logging**
1986

H01-A02C **. Acoustic logging**
1986

H01-A **Unclassified**
197031

H01-B **DRILLING**

H01-B01 **Marine structures and equipment**
Includes mooring and mudmat for offshore.

H01-B01A **. Fixed multi-well platforms**
1986

H01-B01B **. Mobile jack-up platforms**
1986

H01-B01C **. Drill ships**
1986

H01-B01D **. Semi-submersible platforms**
1986

H01-B01E **. Decommissioning of marine production platforms**
Including reuse of upper parts, such as decks.
2002

H01-B02 **Slim hole drilling**

H01-B03 **Rotary drilling**

H01-B03A **. Derricks, rig floor equipment**
197031

H01-B03A1 **.. Derricks**
1986

H01-B03A2 **.. Drilling mud mixing and return mud processing**
1986

H01-B03A3 **.. Hoisting and rotating equipment**
1986

H01-B03B **. Well control equipment**
Also includes logging-while-drilling and measuring and controlling downhole conditions/parameters, etc.
197031

H01-B03B1 **.. Logging while drilling**
1986

H01-B03B2 **.. Measuring procedures and equipment**
1986

H01-B03B3 **.. Valves and control equipment**
Including downhole blowout preventers.
1986

H01-B03C **. Subsurface equipment**
197031

H01-B03C1 **.. Drill bits**
1986

H01-B03C2 **.. Drill collars**
1986

H01-B03C3 **.. Drill pipe**
1986

H01-B03C4 **.. Kelly**
1986

H01-B03C5 **.. Drill and casing protectors, Centralisers**
2006

H01-B03C6 **.. Drilling riser**
2007

H01-B03D **. Transmission/generation of power, data etc.**
Includes cables, connectors, antennae etc. for downhole use.
2005

H01-B04 **Cable drilling**

H01-B05 **Other drilling methods and equipment**
Including electric, explosive, thermal and hydraulic, also includes under-reamer assemblies.

H01-B05A **. Directional and turbo-drilling**
1986

H01-B05B **. Coring**
E.g. sampling.
1986

H01-B06 **Drilling fluids**
1994

H01-B06A **. Water-based drilling fluids**
1986

H01-B06B **. Oil based drilling fluids**
1986

H01-B06C . **Drilling fluid additives**
1994

H01-B07 **Fishing and retrieval tools**

H01-B08 **Testing operations and equipment, general**
1986

H01-B **Unclassified**

H01-C **WELL COMPLETION, STIMULATING, AND SERVICING**

H01-C01 **Casing and tubing excluding well packers, general**

H01-C01A . **Well packers**
1986

H01-C01B . **Joining of casing**
Includes of formation of joints and lateral wellbore sections.
2005

H01-C02 **Cementing**
Includes plastering.

H01-C02A . **Methods and equipment**
1986

H01-C02B . **Cement compositions**
1986

H01-C03 **Fracturing; Fracking**

H01-C04 **Acidising**

H01-C05 **Perforating**

H01-C06 **Wellhead equipment, general**

H01-C06A . **Blowout preventers**
1986

H01-C07 **Screens and liners**

H01-C08 **Gravel packing**

H01-C09 **Consolidation of incompetent formations**
197031

H01-C10 **Servicing**
E.g. cleaning deposits.
197031

H01-C11 **Testing, control operations and equipment, general**
1986

H01-C12 **Water control compositions**
For methods, see H01-D14.
2005

H01-C13 **Cutting or destroying of packers, pipes, plugs, etc.**
Includes reconditioning of well casings, cutting and destroying of damaged pipes, windows, etc.
2012

H01-C14 **Lost circulation control/materials**
2012

H01-C **Unclassified**
197031

H01-D **PRODUCING**

H01-D01 **Oil-lifting equipment**

H01-D02 **Gas-lifting equipment**

H01-D03 **Pumps**

H01-D04 **Separators**

H01-D05 **Marine production equipment**

H01-D06 **Water flooding, general**

H01-D06A . **Brine flooding**
1986

H01-D06B . **Steam flooding**
1986

H01-D06C . **CO2 flooding**
1994

H01-D06D . **Polymer flooding**
2002

H01-D06E . **Alkaline flooding**
2002

H01-D07 **Repressuring**

H01-D08 **Thermal methods**
E.g. steam injection, microwaves, etc.

H01-D09 **Chemical methods**

H01-D10 **Oil shale treatment and equipment**

H01-D11 **Tar sands treatment and equipment**
E.g. bitumen extraction.

H01-D12 **Testing, control operations and equipment, general**
1986

H01-D13 **Methods using bacteria**
1994

H01-D14 **Water control methods**
For compositions, see H01-C12.
2005

H01-D **Unclassified**

H01-E **TREATING AND TESTING**
Does not include well treatment procedures already covered in H01-C:

H01-E01 **Emulsion breaking, desalting and dehydrating**

H01-E02 **Corrosion inhibiting**

H01-E03 **Testing crude oils**
2005

H01-E04 **Water treatment**
Includes composition e.g. anti-sludging agent and apparatus.
2010

H01-E05 **Scale inhibition**
2010

H01-E **Unclassified**

H01-F **NATURAL GAS**

H01-F01 **Field treatment and processing**
197031

H01-F02 **Liquefaction methods and equipment**
197031

H01-F **Unclassified**
197031

H01-G **EXTINGUISHING OIL WELL FIRES**
1994

H01-G01 **Explosives**
1994

H01-G02 **Capping**
1994

H01-G03 **Flame retardant materials**
2011

H01-G **General**
1994

H01-H **WELL KILLING**
2010

H01-H **General**
2010

H01-P **OIL AND GAS WELL PIPES**
Includes pipes used during well drilling, completion and production.
2010

H01-P **General**
2010

H01-R **DEPLETED OIL/GAS FIELDS**
2010

H01-R **General**
2010

H01-X **OTHER CRUDE OIL AND NATURAL GAS ASPECTS**
2010

H01-X **General**
Includes well tractors and protective clothing.
2010

H02 UNIT OPERATIONS

H02-A **DISTILLATION**

H02-A01 **Fractional**

H02-A02 **Atmospheric**

H02-A03 **Azeotropic**

H02-A04 **Extractive**

H02-A05 **Steam**

H02-A06 **Vacuum**

H02-A **Unclassified**
197031

H02-B **SORPTION**

H02-B01 **Molecular sieves**
Includes metal-organic frameworks.
2006

H02-B02 **Silica gel**

H02-B03 **Carbon**

H02-B04 **Urea**

H02-B05 **Pressure swing adsorption**
2002

H02-B **Unclassified**
197031

H02-C **SOLVENT EXTRACTION**

H02-C01 **Organic liquids**

H02-C02 **Inorganic liquids**

H02-C **Unclassified**
197031

H02-D **MISCELLANEOUS OPERATIONS**

H02-D01 **Ion exchange processes**
197031

H02-D02 **Separation by adduct (urea etc.)**
197031

H02-D03 **Centrifugal separation**
1986

H02-D04 **Membrane/filter separation**
1986

H02-D **Unclassified**
197031

H03 TRANSPORTATION AND STORAGE

H03-A **GATHERING LINES**

H03-A **General**

H03-B **PIPELINES**
Includes oil and gas transportation pumps.

H03-B01 **Fluid loss additives**
1994

H03-B02 **Installing/testing pipelines**
2002

H03-B03 **Pipeline accessories**
E.g. connectors.
2002

H03-B04 **Repairing/servicing pipelines**
Includes cleaning of pipelines.
2006

H03-B **General**

H03-C **TANKS, CARS AND TRUCKS**

H03-C **General**

H03-D **MARINE**

H03-D **General**
E.g. oil tankers.

H03-E **STORAGE TANKS AND CONTAINERS**

H03-E **General**

H03-E01 **Recondensation systems**
To prevent loss of HC, especially natural gases, to the atmosphere.
2005

H03-F **UNDERGROUND STORAGE**

H03-F **General**

H03-G **POLLUTION CONTROL, METHODS AND EQUIPMENT**
197031

H03-G **General**

H03-G01 **Marine oil pollution**
E.g. booms, skimmers, etc.
2002

H03-G02 **Soil contamination**
E.g. from oil spills.
2002

H03-X **OTHER TRANSPORTATION AND STORAGE OF OIL AND GAS**
197031

H03-X **Unclassified**

H03-X01 **Transferring oil or petroleum**
2005

H03-X02 **Testing**
E.g. testing and monitoring in storage applications, such as level of stored component, tank leakage.
2006

H04 PETROLEUM PROCESSING

H04-A TREATING

H04-A01 Sweetening

H04-A02 Metal contaminant removal

H04-A03 Nitrogen contaminant removal

H04-A04 Gum or gum former removal

H04-A05 With acid

H04-A06 With alkali

H04-A07 With hydrogen
E.g. hydrotreating.

H04-A08 Deasphalting

H04-A09 Deoiling

H04-A10 Dewaxing
Includes deparaffination/dewaxing.
2005

H04-A10A . Deparaffination/dehazing
Scope now covered by H04-A10.
2002-2004

H04-A Unclassified
197031

H04-B CRACKING

H04-B01 Thermal and coking

H04-B02 Catalytic

H04-B03 Hydrocracking

H04-B04 Other cracking methods
Includes cracking of hydrocarbons by electric means, electromagnetic or mechanical vibrations, by particle radiation or with gases superheated in electric arcs.

H04-B Unclassified
197031

H04-C REFORMING

H04-C01 Thermal

H04-C02 Catalytic

H04-C03 Hydroforming

H04-C Unclassified
197031

H04-D GASOLINE PREPARATION BY

H04-D01 Polymerisation

H04-D02 Alkylation

H04-D03 Isomerisation

H04-D Unclassified
197031

H04-E OTHER PROCESSES

H04-E01 Aromatization

H04-E02 Biosynthesis

H04-E03 Dehydrogenation

H04-E04 Gasification, steam reforming

H04-E05 Hydrocarbon synthesis

H04-E06 Hydrogen manufacture

H04-E07 Pollution control
Scope is covered by H05-L+ since 197031.

H04-E08 Hydrogenation
197031

H04-E09 Dealkylation
197031

H04-E10 Town gas production
197031

H04-E11 Isomerisation (non-gasoline production)
1994

H04-E12 Dearomatization
2002

H04-E13 Alkylation
2002

H04-E14 (De)Halogenation
2011

H04-E15 Etherification
2011

H04-E16 Oligomerisation
2012

H04-E17 Esterification
2013

H04-E18 (Unconventional) upgrading of heavy oil/bitumen
Other H04 manual codes can also be applied in conjunction with this code.
2021

H04-E18A . Upgrading using supercritical water
2021

H04-E18B . Upgrading by other means
2021

H04-E Unclassified
Includes all hydrocarbon conversion procedures not specifically covered elsewhere.

H04-F CATALYSTS

H04-F01 Preparation/composition
This code was retired in 197701. Catalyst production is now coded in H04-F05 and composition in H04-F06.

H04-F02	**General (no process specified)**	**1977**
H04-F02A	**. Treating**	**1977**
H04-F02B	**. Cracking**	**1977**
H04-F02C	**. Reforming**	**1977**
H04-F02D	**. Gasoline preparation**	**1977**
H04-F02E	**. Other processes**	**1977**
H04-F03	**Catalyst carriers**	**1977**
H04-F04	**Regeneration**	**2002**
H04-F05	**Catalyst production and manufacture**	**2005**
H04-F06	**Catalyst composition**	**2010**
H04-F	**Unclassified**	**197031**

H05 REFINERY ENGINEERING

H05-A	**FURNACES**	
H05-A	**General**	
H05-B	**TOWERS AND EQUIPMENT THEREFOR**	
H05-B	**General**	
H05-C	**PRESSURE VESSELS**	
H05-C	**General**	
H05-D	**PIPES, FITTINGS, VALVES**	
H05-D	**General**	
H05-E	**PUMPS AND COMPRESSORS**	
H05-E	**General**	
H05-F	**FLARES**	
H05-F	**General**	
H05-G	**ELECTRICAL EQUIPMENT**	
H05-G	**General**	
H05-H	**PRIME MOVERS**	
H05-H	**General**	
H05-J	**AUTOMATIC CONTROL EQUIPMENT**	
H05-J	**Automatic control equipment** This code is only for automatic control equipment used at the refinery. If the control system is electrical, T06 and/or T01 codes might be required.	
H05-K	**TEST EQUIPMENT AND TEST PROCEDURES**	**1975**
H05-K	**General**	
H05-L	**POLLUTION CONTROL**	
H05-L01	**Air pollution**	**197031**
H05-L02	**Water pollution**	**197031**
H05-L03	**Ground pollution**	**2005**
H05-L	**Pollution control, general**	**197031**
H05-M	**QUENCHING AND HEAT EXCHANGE EQUIPMENT**	**1986**
H05-M	**General**	

H05-N	**REACTORS** **2002**
H05-N	**General**
H05-P	**CHEMICAL TREATMENT** **2002**
H05-P	**General** E.g. coke inhibition, defoaming, descaling, etc.
H05-X	**OTHER REFINERY EQUIPMENT AND METHODS** **1975**
H05-X	**Unclassified**

H06 GASEOUS AND LIQUID FUELS

H06-A	**GASEOUS FUELS**
H06-A01	**(Liquefied) petroleum gases**
H06-A02	**(Liquefied) natural gas**
H06-A03	**Hydrogen** **2002**
H06-A04	**Biofuel gases** E.g. methane production by digestion or fermentation of e.g. waste organic materials. **2002**
H06-A05	**Synthesis gas** **2010**
H06-A	**Unclassified** **197031**
H06-B	**LIQUID FUELS**
H06-B01	**Gasoline**
H06-B02	**Kerosene**
H06-B03	**Jet fuels**
H06-B04	**Diesel fuels**
H06-B04A	**. Biodiesel** Covers any diesel fuel containing components manufactured from vegetable oils of e.g. waste organic materials. **2005**
H06-B05	**Heating oils and fuel oils**
H06-B06	**Liquid fuels derived from waste polymer material** **2002**
H06-B07	**Other liquid biofuels** Any liquid fuels produced biologically other than biodiesel and alcohol. **2005**
H06-B08	**Alcohol fuels** Includes ethanol/methanol and alcohol-based fuels e.g. as used in Brazil. **2005**
H06-B09	**Emulsion fuels** **2006**
H06-B	**Unclassified** **197031**
H06-C	**POLLUTION CONTROL**
H06-C01	**Air** **197031**
H06-C01A	**. Catalytic**

H06-C01B **. Non-catalytic**
2006

H06-C02 **Water**
197031

H06-C03 **I.C. engine, catalytic**
1975

H06-C03A **. Oxidation of CO, NO and hydrocarbons**
1975

H06-C03B **. Reduction of N oxides**
1975

H06-C03B1 **.. Selective Catalytic Reduction (SCR)**
Injection of small amounts of urea and water into hot i.c. engine exhaust gas to reduce NOX production.
2007

H06-C03C **. Sulfur oxides**
2006

H06-C04 **I.C. engine, non-catalytic**
1975

H06-C04A **. By filtration**
Includes filter regeneration.
2005

H06-C04B **. By centrifugal force**
Includes particle separation by inertial mass. See also X25-H06 for electrical details of centrifugal separator.
2011

H06-C04C **. By electrostatic precipitation**
2012

H06-C05 **Detection, control and measurement of I.C. engine exhaust gases**
2002

H06-C06 **Testing, controlling and monitoring of exhaust treatment devices**
Includes measuring, testing, controlling and monitoring of filters, catalysts, etc.
2012

H06-C **Unclassified**
197031

H06-D **ADDITIVES**

H06-D01 **Antioxidants, stabilisers**
1986

H06-D02 **Corrosion and rust inhibitors**
1986

H06-D03 **Anti-icing agents, detergents, dispersants**
Includes surfactants.
1986

H06-D04 **Anti-knocking agents, combustion efficiency improvers**
1986

H06-D05 **Cloud/pour point depressants, fluidity improvers**
Includes additives for decreasing cold filter plugging point.
1986

H06-D06 **Friction reducing and antiwear agents**
1986

H06-D07 **Other specified, but unclassified functions**
1986

H06-D08 **Biocidal**
Includes anti-slime compounds.
2005

H06-D **Multifunctional and general**
1986

H06-E **TESTING FUELS (GASEOUS OR LIQUID)**
1994

H06-E **General**
1994

H06-F **MARKING FUELS**
1994

H06-F **General**
1994

H06-P **FUEL PREPARATION**
Includes manufacturing techniques/apparatus of liquid and gaseous fuels. Includes fuel additive production.
2012

H06-P **General**
Includes manufacturing techniques/apparatus of liquid and gaseous fuels.
2012

H06-X **OTHER FUEL ASPECTS**
2006

H06-X01 **Treatment of fuels**
Includes processes such as chemical, electrical and magnetic treatments as well as irradiation. For fuel separation, see H06-X02.
2006

H06-X02 **Separation of fuels**
e.g. removal of gaseous/liquid fuel from a mixture.
2012

H06-X03 **Recycling/regeneration of fuels**
2015

H06-X **General**
2006

H07 LUBRICANTS AND LUBRICATION

H07-A **SYNTHETIC**

H07-A **General, including lubricants of non-petroleum origin**

H07-A01 **Lubes of vegetable origin**
2005

H07-A02 **Oxygen-containing lubricants – general**
Includes (poly)ethers. Other specific examples of types of compounds which are oxygen-containing lubricants are coded in H07-A02A and H07-A02B.
2005

H07-A02A **. Carboxylic esters**
2007

H07-A02B **. Polyalkylene glycols (PAGs), polyalkylene oxides, polyoxyalkylenes**
2007

H07-A03 **Olefin polymers, Group IV oils**
Polyalphaolefins (PAO's).
2005

H07-A04 **Hydrocarbons**
e.g. alkyl benzenes.
2005

H07-B **MINERAL**

H07-B **General**

H07-B01 **Hydroprocessed or Hydrocracked Mineral Oils**
Extremely High Viscosity Index XHVI oils. Group II lubricants and Group III lubricants are by definition hydroprocessed /hydrocracked oils of specified viscosity ranges.
2005

H07-C **GREASES**

H07-C **General**

H07-D **SOLID OR SEMISOLID LUBRICANTS**

H07-D **General**

H07-D11 **Refrigeration lubricants**
Replaced by H08-D11. All H07-D11 coded documents will be corrected to H08-D11.
2005-2007

H07-E **LUBRICANTS USED IN THE GAS OR VAPOUR PHASE**

H07-E **General**

H07-F **LUBRICATION OF MACHINES**
including lubricating devices.

H07-F **General**

H07-G **ADDITIVES**
Includes additives used for speciality products given under H08-D.

H07-G01 **Antioxidants, stabilisers**

H07-G02 **Corrosion and rust inhibitors**

H07-G03 **Detergents, dispersants**

H07-G04 **Extreme pressure**

H07-G05 **Pour depressants**

H07-G06 **VI improvers**

H07-G07 **Lubricity**

H07-G08 **Multifunctional**

H07-G09 **Other specified, but unclassified functions**

H07-G10 **Biocidal**
2006

H07-G **General**

H07-H **USED LUBE OILS AND SPECIALITY PRODUCTS, RECOVERY OR TREATMENT**
197031

H07-H **General**

H07-J **TESTING OILS**
2002

H07-J **General**
2002

H07-K **MARKING OILS**
2002

H07-K **General**
2002

H07-L **LUBRICANT PRODUCTION**
Includes lubricant additive production.
2006

H07-L **General**
2006

H07-X **OTHER LUBRICATION ASPECTS**
197031

H07-X **Unclassified**

H08 OTHER PETROLEUM PRODUCTS

H08-A **WAXES**

H08-A **General**

H08-B **ASPHALT**

H08-B **General**
e.g. bitumen.

H08-C **RESIDUUM**

H08-C **General**

H08-D **SPECIALITY PRODUCTS**

H08-D01 **White oils**

H08-D02 **Antifreeze**

H08-D03 **Solvents**

H08-D04 **Cutting oils, emulsions (including those of non-petroleum origin)**

H08-D05 **Hydraulic fluids (including those of non-petroleum origin)**

H08-D06 **Textile oils**

H08-D07 **Metalworking fluids**
Until 200601, code entitled 'Rolling oils'. This code covers all metal working fluids including rolling oils since 200601.
2006

H08-D08 **Electrical insulating oils (including those of non-petroleum origin)**
Includes electrorheological fluid.
1986

H08-D09 **Heat transfer fluids**
1986

H08-D10 **For lubrication of electrical components**
2005

H08-D11 **Refrigeration lubricants**
Replaces H07-D11. All H07-D11 coded documents will be corrected to H08-D11. See also J07-A09.
2007

H08-D12 **Magnetorheological fluid**
2011

H08-D **Speciality oils, unclassified/general**

H08-E **OTHER PRODUCTS**

H08-E01 **Carbon black**
197031

H08-E01A **. Activated carbon**
2002

H08-E02 **Petroleum coke**
197031

H08-E03 **Proteins**
197031

H08-E04 **Fuel cells**
Scope covered by L03-E04 and X16-C codes.
197031-2005

H08-E05 **Surfactants, detergents**
197031

H08-E06 **(Unrefined) products used as binders**
197031

H08-E07 **Emulsifiers, foam regulators and wetting agents**
2005

H08-E10 **Biocidal**
2005

H08-E **Other products, general/unclassified**
197031

H09 FUELS NOT OF PETROLEUM ORIGIN

H09-A **DESTRUCTIVE DISTILLATION OF CARBONACEOUS MATERIALS FOR GAS, TAR, COKE ETC.**

H09-A01 **Coal hydrogenation, liquefaction, etc.**
1975

H09-A01A **. In situ (underground) treatment of coal (combustion, liquefaction, etc.)**
1975

H09-A02 **Coke ovens, apparatus, operation, etc.**
1975

H09-A02A **. Metallurgical coke production**
1975

H09-A02B **. Handling and charging equipment**
Includes discharging and quenching equipment.
1986

H09-A02C **. Testing and control in coke ovens**
Includes testing , analysing, determining , measuring and control.
2026

H09-A **General and Unclassified**

H09-B **WORKING UP OF PEAT, PRODUCTION OF PYROLIGNEOUS ACID**

H09-B **General**

H09-C **PRODUCER GAS, WATER GAS, SYNTHESIS GAS PRODUCTION FROM SOLID CARBONACEOUS MATERIALS**

H09-C **General**
e.g. gasification.

H09-D **TREATMENT OF GASES CONTAINING CO**

H09-D **General**
e.g. coke oven gas treatment.

H09-E **ACETYLENE PRODUCTION BY DRY/WET METHODS**
Including purification of fuels containing acetylene.

H09-E **General**

H09-F **OTHER FUELS AND THEIR TREATMENT**
Including briquettes, firelighters, solidified fluid fuels general.

H09-F01 **Briquettes, firelighters, solidified fluid fuels**
1986

H09-F02 **Industrial waste treatment**
1986

H09-F03 **Municipal and agricultural waste treatment**
1986

H09-F04 **Pyrolysis and catalytic treatment of polymers and waste plastic**
e.g. to produce fuel oils and gases.
2002

H09-F **General**

H09-G **COAL-FUEL SLURRIES**
included in H09-X prior to 198601.

H09-G01 **Oil-coal slurries**
1986

H09-G02 **Aqueous-coal slurries**
1986

H09-G03 **Additives**
1986

H09-G **General**
1986

H09-H **OTHER TREATMENT OF COAL**

H09-H01 **Deashing**
1986

H09-H02 **Desulfurisation**
1986

H09-H03 **Coal additives**
2006

H09-H04 **Froth flotation**
2012

H09-H **General and unclassified**
1986

H09-X **OTHER NON-PETROLEUM FUELS AND PROCESSING**

H09-X **Unclassified**

J:
CHEMICAL ENGINEERING

J01 Separation
J02 Mixing, Crushing, Spraying
J03 Electrochemical Processes, Electrophoresis
J04 Chemical/Physical Processing/Apparatus
J05 Boiling and Boiling Apparatus
J06 Storing/Distributing Gases/Liquids
J07 Refrigeration, Ice, Liquefaction/Solidification
J08 Heat Transfer and Drying
J09 Furnaces, Kilns, Ovens, Retorts

J: CHEMICAL ENGINEERING

Code commenced at CPI week 197031.

J01 SEPARATION

J01-A	**EVAPORATION, DISTILLATION, SUBLIMATION**
J01-A01	**Evaporation**
J01-A02	**Liquid-gas mass transfer, general**
J01-A02A	**. Distillation** 1972
J01-A02A1	**.. Azeotropic or extractive distillation** 2002
J01-A02A2	**.. Distillation columns** 2002
J01-A02A3	**.. Column fittings, packings, plates, trays** 2002
J01-A02A4	**.. Other distillation apparatus** 2002
J01-A02B	**. Distillation methods and apparatus** 2005
J01-A03	**Condensation of vapours**
J01-A04	**Sublimation**
J01-A	**Unclassified**
J01-B	**CRYSTALLISATION**
J01-B	**General**
J01-C	**SOLVENT EXTRACTION, DIALYSIS, OSMOSIS**
J01-C01	**Solvent extraction (liquid-liquid extraction only)**
J01-C01A	**. Solid-liquid extraction** 2015
J01-C02	**Displacing liquid by means of another fluid**
J01-C03	**Semi-permeable membrane separation processes**
J01-C03A	**. By reverse osmosis** 1986
J01-C03B	**. By dialysis** 1986
J01-C03B1	**.. By hemodialysis** 1986
J01-C04	**Micro-filters, ultra-filters and nano-filters** 2002
J01-C	**Unclassified**
J01-D	**TREATING LIQUIDS**
J01-D01	**With ad(ab)sorbents, general** Includes preparation and regeneration of ad(ab)sorbents
J01-D01A	**. Chromatography** 1972
J01-D02	**(De)gasification of liquids**
J01-D03	**Emulsion breaking, coagulation** 1972
J01-D04	**Ion exchange** 1972
J01-D04A	**. Regeneration of ion exchangers** 1994
J01-D05	**Removal of contaminant by complexing or chelation** 1994
J01-D06	**Catalytic decomposition** 2002
J01-D07	**Biological treatment** 2005
J01-D08	**Using electricity** 2011
J01-D	**Unclassified**
J01-E	**TREATING GASES AND/OR VAPOURS**
J01-E01	**Recovering volatile solvent vapours from gases** Includes drying of gases.
J01-E01A	**. Dehumidification** 2006
J01-E01B	**. Deodorization** 2006
J01-E02	**Treating waste gases, general** 1972
J01-E02A	**. By wet scrubbing** Includes liquid ad(ab)sorbent preparation and regeneration. 1972
J01-E02A1	**.. Characterised by acidic/alkaline scrubbing liquid** 1977
J01-E02A2	**.. Characterised by redox/complexing scrubbing liquid** 1977
J01-E02A3	**.. Process control and arrangements** 1977
J01-E02B	**. With ad(ab)sorbents, general** Includes preparation and regeneration of ad(ab)sorbents. 1972

J01-E02B1 .. **Molecular sieves**
Includes zeolites.
2006

J01-E02B2 .. **Metal-organic frameworks**
2006

J01-E02B3 .. **Activated carbon**
2013

J01-E02C . **With membranes or ion exchangers**
1977

J01-E02C1 .. **Ion transport membranes**
2005

J01-E02D . **By catalytic methods**
1977

J01-E02E . **Treating waste gases using dry reactive powder e.g. Ca(OH)2**
1994

J01-E02F . **Solid reagent complexing with gas**
1994

J01-E02G . **Ammonia**
1994

J01-E02H . **By other means**
e.g. plasma, bacterial or centrifugal method.
1994

J01-E02H1 .. **Using plasma**
2005

J01-E02H2 .. **Centrifugal methods**
2005

J01-E02H3 .. **By biological methods**
2005

J01-E02H4 .. **By combustion**
2006

J01-E02H5 .. **Using ozone**
2006

J01-E02H6 .. **Using UV ray**
2012

J01-E02I . **Treating fuels with additives to reduce evolution of SOx+NOx**
1994

J01-E03 **Gas separation, general**
1972

J01-E03A . **Gas chromatography**
1972

J01-E03B . **By wet scrubbing**
Includes liquid ad(ab)sorbent preparation and regeneration.
1986

J01-E03C . **Using ad(ab)sorbents, general**
Includes preparation and regeneration of ad(ab)sorbents.
1986

J01-E03C1 .. **Molecular sieves**
Includes zeolites.
2006

J01-E03C2 .. **Metal-organic frameworks**
2006

J01-E03C3 .. **Activated carbon**
2013

J01-E03D . **By pressure swing adsorption**
Includes vacuum swing adsorption.
1986

J01-E03E . **Using semi-permeable membrane**
1986

J01-E03F . **By catalytic methods**
1986

J01-E03G . **Claus plant processes with removal of S**
1994

J01-E03H . **By biological methods**
2005

J01-E03I . **Using UV ray**
2012

J01-E03J . **Temperature swing adsorption**
2013

J01-E **Unclassified**

J01-F **SEPARATION OF SUSPENDED PARTICLES FROM LIQUIDS**

J01-F01 **By sedimentation**
Includes flotation techniques for clarifying liquids, precipitation or flocculation.

J01-F02 **By filtration processes**

J01-F02A . **Gravity filters; filter presses; pressure filters**

J01-F02B . **Cartridge filters; ultra filters**

J01-F02C . **Filters with mobile filter elements**
Has priority over J01-F02A and -F02B.

J01-F02D . **Filtering devices**
e.g. trivial uses, such as bath tubs or swimming pool filters.

J01-F02E . **Filtering of magnetisable materials**
1994

J01-F02E1 .. **Filtering of liquids by applying electrical charge**
1994

J01-F02X **. For filtration of specific substances**
May be used with other J01-F codes if specific method is claimed.
2006

J01-F02X1 **.. Water**
2006

J01-F02X2 **.. Blood**
2006

J01-F02X3 **.. Oil**
Includes lubricants.
2006

J01-F02X4 **.. Fuel**
2006

J01-F02X5 **.. Molten metal**
2012

J01-F03 **By centrifugal processes**

J01-F04 **Dewatering e.g. sludge by compression between belts**
1994

J01-F05 **Magnetic or electrostatic separation**
2011

J01-F **Unclassified**

J01-G **SEPARATION OF DISPERSED PARTICLES FROM GASES/VAPOURS**

J01-G01 **Pre-treatment of gas or vapour**

J01-G02 **By gravity, inertia, centrifugal force**

J01-G03 **By filtration**
Includes filters making use of electricity and magnetism.

J01-G03A **. Regeneration/cleaning of filters**
1977

J01-G03B **. Especially designed for waste gases**
1977

J01-G03C **. For air inflow**
e.g. vehicle air intake, clean room.
2006

J01-G04 **Electrostatic and magnetic precipitation**
Includes electrostatic filters.
1977

J01-G05 **(De)gassing powders and other solids**
1972

J01-G06 **Wet scrubbing**
Only for removal of particulates from gas, otherwise consider J01-E02A.
2006

J01-G09 **Other methods**
2006

J01-G **Unclassified**

J01-H **FILTERING MATERIALS**

J01-H01 **Regenerating filters**
1994

J01-H02 **Filtering materials**
2005

J01-H02A **. Filter materials for liquids treatment**
2005

J01-H02B **. Filter materials for gases treatment**
2005

J01-H02C **. With antibacterial effect**
Replaces J01-H03. All J01-H03 coded documents will be corrected to J01-H02C.
2007

J01-H03 **With antibacterial effect**
Replaced by J01-H02C. All J01-H03 coded documents will be corrected to J01-H02C.
2005-2006

J01-H **General**

J01-J **SEPARATION OF ISOTOPES**

J01-J **General**

J01-K **SOLID/SOLID SEPARATION**

J01-K01 **Solid separation using liquids, pneumatic tables, jigs**

J01-K02 **Magnetic or electrostatic separation**

J01-K03 **Flotation; differential sedimentation**

J01-K04 **Sieving, screening, etc. (by gas currents). etc.**

J01-K **Unclassified**
Includes solid-solid separation by leaching.

J01-L **CENTRIFUGAL APPARATUS**

J01-L01 **Centrifuges**

J01-L02 **Free vortex flow apparatus; cyclones**

J01-L **Unclassified**

J01-X	**OTHER SEPARATION PROCESSES AND APPLICATIONS**
J01-X	**General and unclassified**
J01-X01	**Contaminants and their removal methods** e.g. for soil. **2006**
J01-X01A	**. Removal of organic contaminants** **2005**
J01-X01B	**. Removal of inorganic contaminants** **2005**
J01-X01C	**. Removal by biological methods** **2005**
J01-X02	**Separation of racemates** **2005**

J02 MIXING, CRUSHING, SPRAYING

J02-A	**MIXING, DISPERSING ETC.**
J02-A01	**Mixing processes**
J02-A02	**Mixing apparatus, general**
J02-A02A	**. Flow mixers** **1972**
J02-A02B	**. Rotary mixers** **1972**
J02-A02C	**. Mixer accessories** **2002**
J02-A03	**Emulsification/dispersion** Until 200601, code entitled 'Emulsifying or dispersing agents' This code has now been expanded to include subcodes for processes (J02-A03A), apparatus (J02-A03B) and agents (J02-A03C).
J02-A03A	**. Processes** From 2006 this code has been narrowed to specifically code emulsification or dispersion processes. Prior to 2006 this code covered emulsification/dispersion in general. **2002**
J02-A03B	**. Apparatus** **2006**
J02-A03C	**. Agents** **2006**
J02-A	**Unclassified**
J02-B	**CRUSHING, PULVERISING DISINTEGRATING**
J02-B01	**Plant in general**
J02-B02	**Processes in general**
J02-B03	**Accessories**
J02-B	**Unclassified**
J02-C	**SPRAYING ATOMISING, APPLYING LIQUIDS TO SURFACES**
J02-C01	**Spraying, atomising; nozzles, in general**
J02-C02	**Applying (semi-) liquids to surfaces, in general**
J02-C	**Unclassified**

J02-X	**OTHER MIXING, CRUSHING AND SPRAYING** Includes dosing and dispensing devices.
J02-X	**Unclassified**

J03 ELECTROCHEMICAL PROCESSES, ELECTROPHORESIS

J03-A	**ELECTROCHEMICAL PROCESSES OR APPARATUS**
J03-A01	**For ozone generation** **2006**
J03-A	**General** e.g. ozone generation.
J03-B	**ELECTROLYTIC PROCESSES OR APPARATUS** See also X25-R codes for electrical aspects of electrolysis.
J03-B01	**Electrodes** Including manufacture and coating. **1972**
J03-B02	**Cell design** **1972**
J03-B03	**Separators** **1977**
J03-B03A	**. Ion exchange membranes based on fluorocarbon polymers** **1986**
J03-B04	**Alkali halide electrolysis** **1986**
J03-B05	**Electrolyte** **2011**
J03-B09	**General electrolytic processes** Includes control and testing methods and apparatus of electrolytic cell and processes. **2005**
J03-B	**General and unclassified** See also X25-R codes for electrical aspects of electrolysis.
J03-C	**ELECTROPHORESIS**
J03-C	**General**
J03-D	**ELECTRODIALYSIS**
J03-D	**General** **1972**
J03-D01	**Electro-osmosis** **1994**
J03-X	**OTHER ELECTROCHEMICAL METHODS**
J03-X	**Unclassified**

J04 CHEMICAL/PHYSICAL PROCESSES/APPARATUS

J04-A **COLLOID CHEMISTRY, ETC.**

J04-A01 **Catalysis processes and apparatus**
Use J04-E+ from 197701.
1970-1976

J04-A02 **Catalysts**
Use J04-E+ from 197701.
1970-1976

J04-A03 **Colloid chemistry**
For production of nanoparticles (sols) see J04-F02A.

J04-A04 **Single crystals**

J04-A05 **Granulation, pelleting**

J04-A06 **Encapsulation**

J04-A07 **Powder coatings**
For general coatings, consider M13-H if formed on metal or L02-J03 if involving ceramics.

J04-A **Unclassified**

J04-B **LABORATORY APPARATUS AND METHODS**

J04-B01 **Analytical methods/equipment, general**

J04-B01A **. Spectral**
Includes techniques such as NMR, ESR and mass spectrometry.
1972

J04-B01A1 **.. Mass spectrometry**
2006

J04-B01A2 **.. Optical spectroscopy**
Includes cellular imaging.
2006

J04-B01B **. Specific reactions and reagents**
1972

J04-B01B1 **.. Sugar e.g. for diabetes monitoring**
2005

J04-B01B2 **.. For alcohol**
2006

J04-B01C **. Chromatography**
1977

J04-B01C1 **.. Thin Layer Chromatography (TLC)**
See also S03-E09C3.
2005

J04-B01C2 **.. High Performance Liquid Chromatography (HPLC)**
See also S03-E09C5.
2005

J04-B01C5 **.. Gas Chromatography (GC)**
See also S03-E09C1.
2005

J04-B01C5A **... GC-MS**
2006

J04-B01C6 **.. Liquid chromatography-mass spectrometry (LC-MS)**
2013

J04-B02 **Lab-on-chip (LOC)**
See also S03-H01 codes.
2005

J04-B03 **Detection and analysis of nucleic acids, proteins and amino acids**
See also S03-E14H codes.
2005

J04-B04 **Microanalysis**
Includes microfluidic analysis. May be used with other J04-B codes, and S03 codes likely.
2006

J04-B05 **Biosensor**
See also S03-E03C1.
2011

J04-B **Laboratory apparatus, general**

J04-C **TEST, CONTROL AND SAMPLING, INDUSTRIAL AND LABORATORY**

J04-C01 **Sampling**

J04-C02 **Investigation by properties**
E.g. determination of pressure, temperature, concentration, pH, etc.

J04-C02A **. pH Monitoring**
See also S03-F10 codes.
2005

J04-C02B **. Electrical**
E.g. resistance, conductivity, capacitance etc. See also S03-E02 codes. From 2006 the title of this code has been changed from 'Conductivity' to 'Electrical' though the content of the code has not changed.
2005

J04-C02C **. Optical**
e.g. absorption, fluorescence.
2006

J04-C02D **. Mechanical properties e.g. creep resistance**
2007

J04-C03 **Investigation by method**
E.g. monitoring of reactions. Includes testing devices and apparatus.

J04-C04 **Investigation by material**

J04-C04A **. Gas sensors**
See also S03-E02, S03-E03, S03-E14P codes.
2005

J04-C **General and unclassified**

J04-D **FLUIDISED BED APPARATUS**
1972-2002

J04-D **General**
Not used from 2002 Wk01; scope is now covered by J04-E07A and J04-X03A.
1972-2002

J04-E **CATALYSIS**
See also J04-A, and N codes for catalysts, catalytic processes and applications

J04-E01 **Catalytic processes**
1977

J04-E02 **Apparatus for catalytic processes**
Not used from 2002 Wk01; scope is now covered by J04-(E06-09).
1977-2002

J04-E03 **Catalyst supports**
1977

J04-E04 **Catalysts**
1977

J04-E04A **. Redox**
1977

J04-E04B **. (De)hydrogenation**
1977

J04-E04C **. Photocatalysts**
2005

J04-E04D **. Electrocatalyst**
e.g. for electrode catalysts, for use in electrolyzer, fuel cell etc.
2006

J04-E05 **Regeneration/recovery**
Also includes waste or spent catalyst disposal methods/apparatus.
1977

J04-E06 **Reactors – general or unclassified**
2002

J04-E07 **Apparatus for gas phase reactions**
2002

J04-E07A **. Fluidized or moving beds, risers**
2002

J04-E07B **. Fixed beds**
2002

J04-E07C **. Tubular, tube bundles**
2002

J04-E08 **Apparatus for liquid, gas/liquid processes**
2002

J04-E08A **. Apparatus for homogeneous phases, solutions**
2002

J04-E08B **. Columns; counter-current reactions**
2002

J04-E08B1 **.. Apparatus for reactive or catalytic distillation**
2002

J04-E09 **Other apparatus for catalytic processes**
2002

J04-E09A **. Waste treatment apparatus**
2005

J04-E09B **. For sensor applications**
2006

J04-E09C **. Photocatalytic apparatus**
See J04-E04C for photocatalysts per se.
2006

J04-E10 **Testing of catalysts and devices**
2006

J04-E11 **Catalyst production**
Includes catalyst support production.
2007

J04-E **Unclassified**
1977

J04-F **MICROSCALAR PROCESSES**

J04-F01 **Microprocesses**
See J04-X04 for microreactors.
2006

J04-F02 **Nanostructure production**
See L02-H04 if carbon is involved.
2006

J04-F02A **. Nanoparticles**
2006

J04-F02A1 **.. Composite particles**
Includes coated particles.
2006

J04-F02B **. Other regular forms**
e.g. nanotubes, nanorods, nanowhiskers.
2006

J04-F02C **. Nanofilms**
2006

J04-F02D **. Nanocrystals**
2012

J04-F	**Unclassified**
J04-X	**OTHER CHEMICAL METHODS** Used for all processes and apparatus of chemical interest with no specific application elsewhere in CPI
J04-X01	**Reactors for plasma processes** **1994**
J04-X02	**Forming films by Langmuir-Blodgett processes** **1994**
J04-X03	**Reactors for non-catalytic chemical processes** **2002**
J04-X03A	**. Fluidised bed apparatus** **2006**
J04-X04	**Miniaturised reaction apparatus** Includes microfluidic devices, MEMS devices, see also relevant U12-B03F codes for MEMS. See J04-F01 for microprocesses. **2002**
J04-X05	**Gas generators** **2012**
J04-X	**Unclassified**

J05 BOILING AND BOILING APPARATUS

J05-A	**BOILING AND BOILING APPARATUS**
J05-A	**General**

J06 STORING/DISTRIBUTING GASES/LIQUIDS

J06-A **GAS HOLDERS OF VARIABLE CAPACITY**

J06-A **General**

J06-B **VESSELS FOR LIQUIDS OR COMPRESSED, LIQUEFIED OR SOLIDIFIED GASES, GAS-HOLDERS, DECANTATION AND VAPORISATION OF LIQUEFIED OR SOLIDIFIED GASES**

J06-B01 **Pressure vessels**

J06-B02 **Vessels not under pressure**

J06-B03 **Filling vessels with gases**

J06-B04 **Discharging gases from pressure vessels**

J06-B05 **Discharging gases from vessels not under pressure**

J06-B06 **Gas solvents and gas adsorbents**

J06-B06A . **For batteries and fuel cells**
For supplying hydrogen specifically for fuel cells.
2005

J06-B06B . **For vehicle fuel tanks**
For H2/CH4 powered IC engines (i.e. not fuel cells).
2005

J06-B06C . **Gas adsorbents**
2006

J06-B06C1 .. **Molecular sieves**
Includes zeolites.
2006

J06-B06C2 .. **Metal-organic frameworks**
2006

J06-B06C3 .. **Alloys**
2013

J06-B07 **Vessel details**

J06-B08 **Control**
Includes controlling flow rates, thermal energy management, safety arrangements etc.
2007

J06-B **General and unclassified**

J06-C **PIPE SYSTEMS, PIPELINES**

J06-C01 **Pipeline systems; pipe construction**

J06-C02 **Supervising or controlling operations**

J06-C **General and unclassified**

J07 REFRIGERATION, ICE, LIQUEFACTION/ SOLIDIFICATION

J07-A **REFRIGERATION MACHINES, PLANTS OR SYSTEMS, COMBINED HEATING AND REFRIGERATION SYSTEMS**

J07-A01 **Compression type**

J07-A02 **Sorption type**

J07-A03 **Other types having single mode of operation, combination of heating and refrigeration; special energy sources**
Includes heat pumps.

J07-A04 **Components**

J07-A05 **Arrangements**

J07-A06 **Control and safety devices**

J07-A07 **Air conditioners**
Includes humidifiers.
1972

J07-A08 **Refrigeration media**
1972

J07-A09 **Lubricants for refrigeration media**
See also H08-D11.
1994

J07-A10 **Refrigeration and a/c sealants**
Injecting into systems to seal pinholes. Includes e.g. organosilanes.
2007

J07-A **General and Unclassified**

J07-B **FREEZING OF (SEMI)LIQUIDS**

J07-B01 **Ice production**

J07-B02 **Ice or snow production for special purposes**

J07-B03 **Ice working and distribution**

J07-B **General and unclassified**

J07-C **REFRIGERATORS, COOLING AND FREEZING APPARATUS**

J07-C01 **Devices not associated with refrigerating machinery**

J07-C02 **Devices associated with refrigerating machinery**

J07-C03 **Structural parts of general application, etc.**

J07-C **General and unclassified**
e.g. domestic use, such as cold stores and cold boxes.

J07-D **GAS LIQUEFACTION, SOLIDIFICATION OR SEPARATION BY PRESSURE OR COLD**

J07-D01 **Liquefying or solidifying gases**

J07-D02 **Separating gases by liquefaction or solidification**

J07-D03 **Cold exchangers or accumulators**

J07-D **General and unclassified**

J08 HEAT TRANSFER AND DRYING

J08-A **STEAM OR VAPOUR CONDENSERS**

J08-A01 **Steam or vapour separated from coolant by walls**

J08-A02 **Steam or vapour comes in direct contact with coolant**

J08-A03 **Employing combination of above two; other condensers**

J08-A04 **Combinations of two or more condensers**

J08-A05 **Auxiliary systems, arrangements or devices**

J08-A06 **Controlling arrangements especially for condensers**

J08-A **General and unclassified**

J08-B **DIRECT-CONTACT (NON-INTERACTIVE) HEAT-EXCHANGERS**

J08-B01 **Direct-contact trickle coolers**
e.g. cooling towers.

J08-B02 **Other direct-contact heat-exchange apparatus**

J08-B **General and unclassified**

J08-C **HEAT-EXCHANGERS WITHOUT DIRECT CONTACT**

J08-C01 **Having stationary conduit assemblies for one medium only, the media contacting different sides of conduit wall**

J08-C02 **As above, but stationary conduits for both media**

J08-C03 **Having moving conduit assemblies**

J08-C04 **Employing intermediate heat-transfer media or bodies**
Includes heat pipes.

J08-C **General and unclassified**

J08-D **HEAT TRANSFER APPARATUS, DETAILS OF GENERAL APPLICATIONS**

J08-D01 **Elements for heat exchangers**

J08-D02 **Preventing deposits or corrosion**

J08-D03 **Special features**

J08-D04 **Modifying heat transfer**

J08-D05 **Control arrangements**

J08-D06 **Heat transfer media**
1972

J08-D07 **Geothermal heat transfer**
1994

J08-D08 **Heat exchange from exhaust gases**
1994

J08-D **General and unclassified**
Includes solar heat collectors not codable elsewhere.

J08-E **HEAT-EXCHANGER FOR CLEANING**

J08-E01 **Appliances for cleaning**

J08-E02 **Processes for cleaning**

J08-E03 **Details of cleaning**

J08-E **General and unclassified**

J08-F **DRYING PROCESSES**

J08-F01 **Preliminary treatment of solids/objects to aid drying**

J08-F02 **Drying solids with application of heat**

J08-F03 **Drying solids without application of heat**

J08-F04 **Freeze drying**
e.g. sublimation drying.
1972

J08-F05 **Compression drying**
2007

J08-F **General and Unclassified**

J08-G **DRYING MACHINES AND APPARATUS**

J08-G01 **Articles at rest or locally agitated**

J08-G02 **With non-progressive movement**

J08-G03 **With progressive movement**

J08-G04 **Combination of at least two of above kinds**

J08-G05 **Rotary dryers**
1972

J08-G06 **Spray dryers**
1972

J08-G07 **Compression dryers**
2007

J08-G **General and unclassified**

J08-H **DRYING, GENERAL APPLICATIONS**

J08-H01 **Drying using air or gas currents**

J08-H02	**Through air drying**	**2007**
J08-H	**General and unclassified**	
J08-S	**HEAT STORAGE**	
J08-S01	**. Materials**	**2011**
J08-S02	**. Apparatus**	**2011**
J08-S	**General and unclassified**	**2011**

J09 FURNACES, KILNS, OVENS, RETORTS

J09-A	**FURNACE CONSTRUCTION** Excluding processes therein.	
J09-A01	**Furnaces with stationary charge**	
J09-A02	**Stationary furnaces with mechanically-moved charge**	
J09-A03	**Rotary furnaces**	
J09-A04	**Open sintering apparatus**	
J09-A	**General and unclassified**	
J09-B	**FURNACE ACCESSORIES**	
J09-B01	**Construction features**	
J09-B01A	**. Refractories**	**2002**
J09-B02	**Handling and support charge** e.g. rams, screw feeders, etc.	
J09-B03	**Preheating charge; cooling; using waste heat**	
J09-B04	**Control and safety devices** Includes measuring and testing devices.	
J09-B	**General and unclassified**	
J09-C	**INCINERATION AND OTHER WASTE DISPOSAL METHODS** Includes disposal of waste gases, liquids and solids not codable elsewhere.	**1975**
J09-C	**General**	
J09-C01	**Disposal of waste other than by incineration**	**1994**
J09-C01A	**. Recycling of waste**	**2006**
J09-C01B	**. Fermentation of waste** e.g. for compost. Consider H09-F code if fermentation for fuel, and D05 for details.	**2006**
J09-C02	**By incineration**	**2005**
J10-A	**STORAGE OF WASTES IN LANDFILLS**	
J10-A	**Storage of wastes in landfills**	**1994**

K:
NUCLEONICS, EXPLOSIVES, PROTECTION

K01 Firefighting
K02 Protection, Breathing Apparatus
K03 Explosive Charges, Blasting
K04 Explosives, Matches
K05 Nuclear Reactors
K06 Nuclear Power Plant
K07 Health Physics
K08 Nucleonics, X-Ray Techniques, etc
K09 Applications

K: NUCLEONICS, EXPLOSIVES, PROTECTION

Code commenced at CPI 197031.

K01 FIREFIGHTING

K01-A	**FIREFIGHTING, FIRE-EXTINGUISHING COMPOSITIONS** Does not include flame retardants.
K01-A	**General**

K02 PROTECTION, BREATHING APPARATUS

K02-A	**PROTECTION AGAINST NBC AGENTS**
K02-A	**General**
K02-A01	**Chemical** **2005**
K02-A02	**Biological** **2005**
K02-A03	**Nuclear** **2005**
K02-A04	**Detection and analysis of NBC agents** **2006**
K02-B	**BREATHING APPARATUS (CHEMICAL AGENTS *ONLY*)**
K02-B	**General**

K03 EXPLOSIVE CHARGES, BLASTING

Covers physical and mechanical aspects of explosives and ammunition.

K03-A	**EXPLOSIVE CHARGES, AMMUNITION, MISSILES, FUSES**
K03-A01	**Cartridge, shell, bomb and mine construction, filling and manufacture** **1972**
K03-A02	**Projectiles and warheads** **1972**
K03-A02A	. **Lethal projectiles** e.g. bullets, missiles. **2006**
K03-A02B	. **Non-lethal projectiles** e.g. plastic baton rounds, tranquilizer delivery systems, paintballs, immobilising weapons. **2006**
K03-A03	**Arming, fusing, safety mechanisms** Include storage and packaging of ammunition. **1972**
K03-A04	**Decommissioning of ammunition** **2006**
K03-A	**Unclassified**
K03-B	**BLASTING**
K03-B	**General**
K03-X	**EXPLOSIVE CHARGES**
K03-X	**General**

K04 EXPLOSIVES, MATCHES

K04-A **EXPLOSIVES (CHEMICAL ASPECTS)**
Use K04-E+, K04-F+ and K04-G+ from 198601.
1970-1985

K04-A01 **Based on inorganic nitrates**
1970-1985

K04-A02 **Based on (per)chlorates**
1970-1985

K04-A03 **Sprengel-type**
1970-1985

K04-A04 **Manufacture and treatment**
1970-1985

K04-A **Unclassified**
1970-1985

K04-B **DETONATORS, PYROPHORIC COMPOSITIONS**

K04-B01 **Detonating or primer compositions; (non)-electric detonators; primers; fuses, blasting-caps, and accessories**

K04-B02 **Chemical contact igniters; chemical lighters; pyrophoric compositions; flints**

K04-B **Unclassified**

K04-C **FIREWORKS, SMOKE GENERATION, INCENDIARY AND GAS ATTACK COMPOSITIONS, GENERATION OF GAS FOR BLASTING OR PROPULSION**

K04-C01 **Rocket fuels, propellants**
1972

K04-C02 **Gas generators**
e.g. for automotive air bags.
2006

K04-C **Other fireworks, smoke generation, incendiary/gas attack compositions, gas generation**
Includes chemical inflation of liferafts, etc.

K04-D **MATCHES**
Includes matchbox making machinery, etc.

K04-D **General**

K04-E **EXPLOSIVES (CHEMICAL ASPECTS)**
See K04-A+: prior to 198601

K04-E01 **Emulsion, water gel, slurry explosives, general + unclassified**
1986

K04-E01A **. Based on nitrate oxidiser**
1986

K04-E01A1 **.. ANFO**
1986

K04-E01B **. Based on (per)chlorate oxidiser**
1986

K04-E02 **Organic nitro compound-containing explosives**
Nitrocellulose, nitroglycerine, nitroglycol, TNT etc. but excluding propellants containing NG; see K04-C01.
1986

K04-E03 **Explosives containing inorganic or organometallic compounds**
Including lead azide, lead styphnate etc.
1986

K04-E04 **Promoters, enhancers and regulatory sequences**
1986

K04-E **General**
1986

K04-F **EXPLOSIVES MANUFACTURE/TREATMENT**
See K04-A04 prior to 198601

K04-F **Explosives treatment, general +unclassified**
1986

K04-F01 **Explosives manufacture**
2002

K04-F02 **Explosives disposal**
2002

K04-F03 **Explosives detection**
E.g. in luggage
2002

K04-G **NOVEL ADDITIVES FOR EXPLOSIVE COMPSNS.**
(Sensitisers, stabilisers, density control agents, etc.) see K04-A prior to week 198601.

K04-G **General**
1986

K05 NUCLEAR REACTORS

K05-A **REACTOR PROCESSES**

K05-A01 **Fast fission**

K05-A02 **Thermal**

K05-A02A **. Gas-cooled**

K05-A02B **. Water-cooled**

K05-A02C **. Liquid metal cooled**

K05-A03 **Nuclear fusion reactors**
1986

K05-A03A **. Plasma containment**
1986

K05-A03B **. Fusion targets (fuel)**
1986

K05-A03C **. Constructional features**
Including blanket arrangements.
1986

K05-A **Unclassified**
Including controlled fusion reactors prior to 198601.

K05-B **REACTOR COMPONENTS AND ACCESSORIES**

K05-B01 **Pressure vessels**

K05-B02 **Shielding**

K05-B03 **Coolants, general**

K05-B03A **. Liquid metal coolants**
1972

K05-B04 **Fuel elements - general**

K05-B04A **. Chemical processes; enrichment of U**
Includes some extraction of U, Pu etc. from their ores.
1972

K05-B04B **. Fuel element construction**
1972

K05-B05 **Moderators, general**

K05-B05A **. Heavy water; enrichment, deuterium production**
1972

K05-B06 **Control and mechanisms, general**

K05-B06A **. Neutron flux control, control rods, general**
1972

K05-B06A1 **.. Shutdown and start-up procedures**
1986

K05-B06A2 **.. Emergency control**
1986

K05-B06B **. Measurement/control of coolant flow**
1986

K05-B06C **. Defective fuel rod location/ detection**
1986

K05-B06D **. Measurement of other operating parameters**
1986

K05-B07 **Accessories**
Covers accessories of general or unspecified application; specific accessories are coded according to their use under a K05-B: code.

K05-B07A **. Fuel rod handling/transfer**
1986

K05-B07B **. Used fuel storage facilities**
1986

K05-B07C **. Waste removal/treatment**
e.g. desalting condensate.
1986

K05-B07D **. Servicing/maintenance apparatus**
1986

K05-B07E **. Cables, piping, connectors**
1986

K05-B07E1 **.. Valves**
2002

K05-B07F **. Pumps**
1986

K05-B07G **. Other components**
1986

K05-B07J **. Inspection apparatus**
2006

K05-B08 **Manufacture of reactor and components**
2012

K05-B10 **Materials for reactors and components**
2005

K05-B **Unclassified**

K06 NUCLEAR POWER PLANT

K06-A **STEAM RAISING PLANT**

K06-A **General**

K06-B **HEAT EXCHANGERS**

K06-B **General**

K06-C **RECOVERY OF FUEL, ETC.**

K06-C **General**

K06-X **OTHER NUCLEAR PLANT ASPECTS**
Includes thermoelectric converters.

K06-X **General**

K07 HEALTH PHYSICS

K07-A **PROTECTIVE MEASURES, MONITORING, SHIELDING, CLOTHING ETC.**

K07-A01 **Personal dosimeters**
1972

K07-A01A **. Industrial monitoring**
2002

K07-A02 **Shielding, general**
1986

K07-A02A **. Transport/storage containers**
1994
Previous code(s): K07-A02

K07-A02B **. Fall-out shelters**
1994

K07-A02C **. Shielding plants and equipment**
2002

K07-A02D **. Shielding personnel**
2002

K07-A03 **Decontamination of industrial sites**
1986

K07-A03A **. Decontamination of personnel/clothing**
2002

K07-A **Other protective measures, monitoring, shielding, clothing etc.**

K07-B **RADIOACTIVE WASTE TREATMENT, ETC.**

K07-B **General**

K07-B01 **Concentration, solidification, encapsulation**
1986

K07-B01A **. Preparation for long-term storage**
1986

K07-B02 **Waste gas treatment**
1986

K07-B03 **Waste liquid treatment**
2002

K07-X **OTHER PROTECTIVE AND WASTE TREATMENT TECHNIQUES AND APPARATUS**

K07-X **General**

K08 NUCLEONICS, X-RAY TECHNIQUES, ETC.

K08-A **NUCLEAR OR X-RAY MEASUREMENT**

K08-A **General**
E.g. detection.

K08-A01 **Neutron counters**
1972

K08-A02 **Charged particle counters**
2005

K08-A03 **Gamma ray and cosmic ray counters**
2005

K08-A04 **X-ray measurement**
2005

K08-B **CONVERSION OF CHEMICAL ELEMENTS, PRODUCING/MODERATING NEUTRONS**

K08-B **General**

K08-C **ENERGY FROM RADIOACTIVE SOURCES, UTILISING COSMIC RADIATION**

K08-C **General**

K08-D **NUCLEAR EXPLOSIVES**
Includes nuclear explosion simulation.

K08-D **General**

K08-E **X-RAY TECHNIQUES**

K08-E **General**

K08-E01 **X-ray imaging**
2005

K08-E02 **X-ray therapy or treatment**
2005

K08-F **PLASMA TECHNIQUES**

K08-F **General**

K08-G **PARTICLE ACCELERATORS AND CYCLOTRONS**
2002

K08-G **General**
2002

K08-H **IRRADIATION**
2002

K08-H **General**
2002

K08-H01 **Medical**
2002

K08-H02 **Food**
2002

K08-X **OTHER NUCLEAR TECHNIQUES**
Includes general isotope separation.

K08-X **General**

K08-X01 **Isotope separation**
2006

K09 APPLICATIONS

K09-A	**PLASTICS**
K09-A	**General**
K09-B	**MEDICINE**
K09-B	**General**
K09-B01	**Imaging, use of isotopes, tracers** **2005**
K09-B02	**Radiotherapy** **2005**
K09-C	**AGRICULTURE**
K09-C	**General**
K09-D	**FOOD**
K09-D	**General**
K09-D01	**Irradiation** E.g. to improve shelf-life. **2005**
K09-D02	**Testing** **2005**
K09-E	**RADIOCHEMISTRY**
K09-E	**General**
K09-F	**TEXTILES**
K09-F	**General**
K09-G	**PHOTOGRAPHY**
K09-G	**General**
K09-H	**PETROLEUM**
K09-H	**General**
K09-J	**METALLURGY**
K09-J	**General**
K09-K	**GENERAL ENGINEERING**
K09-K	**General**
K09-L	**CONTROL GEAR ENGINEERING**
K09-L	**General**
K09-X	**OTHER NUCLEAR APPLICATIONS**
K09-X	**General**

L:
GLASS, CERAMICS, ELECTRO(IN)ORGANICS

L01 Glass, Vitreous Enamels
L02 Refractories, Ceramics, Cement
L03 Electro-(in)organics
L04 Semiconductors

L: GLASS, CERAMICS, ELECTRO(IN)ORGANICS

Code commenced at CPI 197031.

L01 GLASS, VITREOUS ENAMELS

L01 **Glass, vitreous enamels, general**
1986

L01-A **CHEMICAL COMPOSITIONS**

L01-A01 **Alkalis and alkaline earths, general**

L01-A01A **. Soda lime glasses**
1972

L01-A01B **. Other alkali(ne earth) glasses (more than 5%)**
1972

L01-A01C **. Containing minor amounts alkali (less than 5%)**
1972

L01-A02 **Pd, Pt and rare earths**

L01-A02A **. Lanthanide-containing glass**
2005

L01-A02B **. Platinum and palladium containing glass**
2005

L01-A03 **Other metals, general**

L01-A03A **. Alumina-bearing glasses**
1972

L01-A03B **. Colouring oxide additions**
1972

L01-A03C **. Other modifying oxides**
Oxides of all metals of groups Ib, IIb, III, IV, Vb, VIb, VIIb and VIII, but oxides for modifying borate/borosilicate glasses - see L01-A06B, L01-A06D.
1972

L01-A03C1 **.. Lead oxide**
1986

L01-A03C2 **.. Zinc oxide**
1986

L01-A04 **0-50% silica**

L01-A05 **50-100% silica**

L01-A06 **Borate and borosilicate, general**

L01-A06A **. Unmodified borate**
1972

L01-A06B **. Modified borate (modified with non-metallic compounds and oxides of transition metals)**
1972

L01-A06C **. Unmodified borosilicate**
1972

L01-A06D **. Modified borosilicate (modified with non-metallic compounds and oxides of transition metals)**
1972

L01-A07 **Other non-metals, general**

L01-A07A **. Oxide network formers (oxides of P and group Va, VIa and VIIa metals)**
1972

L01-A07B **. Non-oxide glasses (sulfates, phosphides, halides, chalcogenides)**
1972

L01-A08 **Glass ceramics, crystallised glass compositions**

L01-A09 **Glass composition with special properties e.g. luminescent glass**
2012

L01-A **Unclassified**
including vitreous alloys.

L01-B **TREATMENT OF BATCH**

L01-B **General**

L01-B01 **Preparation of precursors for glass**
1972

L01-B02 **Reuse/recycling of glass**
2006

L01-C **GLASS MANUFACTURE (REPLACING FURNACE)**

L01-C01 **For general application**

L01-C02 **Design and construction of melting tanks**

L01-C03 **Operation, working and control of melting tanks**

L01-C04 **Glass delivery from melting tank**

L01-C05 **Crucibles**
1986

L01-C06 **Glass manufacture by sol-gel process**
1986

L01-C **Unclassified**
Including crucibles for glass melting.

L01-D **FORMING FLAT GLASS**

L01-D01 **Drawing glass from the melt**

L01-D02 **Rolling and casting glass**

L01-D03 **Forming glass in contact with a liquid surface, general (float glass production)**

L01-D03A **. Bath chamber**

L01-D03B **. Glass treatment in the chamber**

L01-D03C **. Thickness control**

L01-D04 **Wire reinforced glass sheet manufacture**
1986

L01-D05 **Glass sheet manufacture by sol-gel process**
1986

L01-D **Unclassified**
Including wire reinforced glass.

L01-E **FORMING HOLLOW-WARE**

L01-E01 **General**
1970-1985

L01-E02 **Gob formation**
Including cutting, jets.

L01-E03 **Blowing glass**
Including blow moulding.

L01-E04 **Pressing glass**

L01-E05 **Moulding glass**

L01-E06 **Moulds**

L01-E07 **Transfer mechanisms**
1972

L01-E08 **Shaping glass manufactured by sol-gel process**
1986

L01-E **Unclassified**

L01-F **OTHER FORMING PROCESSES**

L01-F01 **General**
1970-1985

L01-F02 **Tube, rod and cylinder formation**

L01-F03 **Glass fibre manufacture**

L01-F03A **. Surface treatment**

L01-F03A1 **.. Coating optical glass fibres**
1986

L01-F03B **. Nozzles for fibre formation**
1972

L01-F03C **. Ancillary equipment**
1972

L01-F03D **. Forming rovings (fibre twisting, plaiting)**
1972

L01-F03E **. Post forming**
Including cutting fibre mat.
1972

L01-F03F **. Optical fibre preform manufacture**
1986

L01-F03F1 **.. Core and sheath composition**
1986

L01-F03F2 **.. Glass soot manufacture and deposition on core or sheath**
1986

L01-F03F3 **.. Depositing glass films on core or sheath**
Except L01-F03F2.
1986

L01-F03F4 **.. Fibre preform manufacture using preformed sheath and core rod**
1986

L01-F03F5 **.. Organic coatings**
2002

L01-F03F6 **.. Inorganic coatings**
2002

L01-F03F7 **.. Optical and other coatings**
2002

L01-F03G **. Optical fibre drawing and/or spinning**
1986

L01-F03H **. Optical fibre cutting and joining**
1986

L01-F03J **. Multicore and elliptical single core optical fibre manufacture**
1986

L01-F03K **. Apparatus for manufacturing optical fibres**
1986

L01-F03L **. Optical fibre cable manufacture**
1986

L01-F03M **. Optical fibres, general**
1986

L01-F04 **Shaping glass to special forms**

L01-F05 **Shaping glass manufactured by sol gel process**
1986

L01-F06 **Vapour deposition of glass to form layers**
1986

L01-F07 **Foamed glass**
1986

L01-F **Unclassified**
Including glass manufacture by methods other than melting and casting, and sintering; especially foamed glass manufacture. Also includes radioactive waste disposal in glass.

L01-G **POST FORMING TREATMENT**

L01-G01 **General**

L01-G01A **. Transfer and handling**
1972

L01-G02 **Annealing, sintering**

L01-G03 **Thermal and chemical toughening**

L01-G04 **Surface coating of glass**

L01-G04A **. Coating glass bottles**
1986

L01-G04B **. Coating glass sheet with organic material**
1986

L01-G04C **. Coating glass sheet with inorganic material**
1986

L01-G04C1 **.. Coating glass sheet with metallic material**
2011

L01-G04D **. Coating optical components**
1986

L01-G04E **. Coating glass tableware**
1986

L01-G04F **. Coating techniques**
2010

L01-G04F1 **.. PVD, CVD and sputtering**
2010

L01-G04F2 **.. Other coating methods**

L01-G04F2A **... Electrostatic coating**
2011

L01-G04F2B **... Spin coating**
2011

L01-G04F2C **... Sol gel coating**
2011

L01-G04G **. Coating other glass forms**
Includes tubes and unspecified forms
2011

L01-G04G1 **.. Coating glass with organic materials**
See L01-G04B for coating glass sheet with organic material.
2011

L01-G04G2 **.. Coating glass with inorganic materials**
See L01-G04C for coating glass sheet with inorganic material.
2011

L01-G04G3 **.. Coating glass with metallic materials**
See L01-G04C1 for coating glass sheet with metallic material.
2011

L01-G05 **Surface modification (not mechanical)**
Includes colouring, titurisation etc.

L01-G05A **. Doping glass surface**
e.g. to change refractive index for wave guides.
1986

L01-G05B **. Patterning glass**
2011

L01-G05C **. Etching**
Includes glass frosting.
2011

L01-G06 **Mechanical surface treatment**

L01-G07 **Cutting of flat glass**

L01-G08 **Cutting of glass other than flat**

L01-G09 **Decorating glass**
Including special colouring.

L01-G10 **Bending glass**

L01-G11 **Cleaning glass**
2010

L01-G **Unclassified**

L01-H **JOINING GLASS**

L01-H01 **General**
1970-1985

L01-H02 **Laminated glass**
Specific laminates covered by codes in L01-H03 to L01-H09 sections take preference over this code.

L01-H03 **Joining glass by soldering/welding**
From 2011 this code is expanded to include welding e.g. ultrasonic welding. Includes sealing and soldering glass.

L01-H03A **. Glass to glass**
2011

L01-H03B **. Glass to plastic/polymers**
2011

L01-H03C **. Glass to ceramic**
2011

L01-H03D **. Glass to metals**
2011

L01-H03E **. Glass to semiconductors e.g. silicon**
2011

L01-H03X **. Glass to other materials**
Includes wood, paper etc.
2011

L01-H04 **Joining glass by fusion**
Includes thermal, thermocompression bonding, hot isostatic pressing. Exclude vitreous enamelling which is coded in L01-H06.

L01-H04A **. Glass-metal seals**
1986

L01-H04B **. Joining glass to ceramics**
1986

L01-H04C **. Glass to glass**
2011

L01-H04D **. Glass to plastic/polymers**
2011

L01-H04E **. Glass to semiconductors e.g. silicon**
2011

L01-H04X **. Glass to other materials**
Includes wood, paper etc.
2011

L01-H05 **To other material with interlayer**
e.g. of plastics.

L01-H05A **. Glass-plastic seals**
Including (sealing) double glazing units.
1994

L01-H05B **. Glass to glass**
2011

L01-H05C **. Glass to ceramic**
2011

L01-H05D **. Glass to metals**
2011

L01-H05E **. Glass to semiconductors e.g. silicon**
2011

L01-H05X **. Glass to other materials**
Includes wood, paper etc.
2011

L01-H06 **Vitreous enamelling**

L01-H07 **By sealants**
Including adhesives.

L01-H07A **. Glass to glass**
2011

L01-H07B **. Glass to plastic/polymers**
2011

L01-H07C **. Glass to ceramic**
2011

L01-H07D **. Glass to metals**
2011

L01-H07E **. Glass to semiconductors e.g. silicon**
2011

L01-H07X **. Glass to other materials**
Includes wood, paper etc.
2011

L01-H08 **Glazes**
1972

L01-H09 **Other bonding methods**
2011

L01-H09A **. Glass to glass**
2011

L01-H09B **. Glass to plastic/polymers**
2011

L01-H09C **. Glass to ceramic**
2011

L01-H09D **. Glass to metals**
2011

L01-H09E **. Glass to semiconductors e.g. silicon**
2011

L01-H09X **. Glass to other materials**
Includes wood, paper etc.
2011

L01-H **Unclassified**

L01-J **FINISHED PRODUCT HANDLING**

L01-J01 **General**
1970-1985

L01-J02 **Quality control**

L01-J03 **Filling glass containers**

L01-J04 **Packing and storage**

L01-J **Unclassified**

L01-K **GLASS CERAMICS**

L01-K01 **General**
1970-1985

L01-K02 **Process and apparatus**

L01-K03 **Applications**

L01-K **Unclassified**

L01-L **APPLICATIONS OF GLASS**

L01-L01 **Building**

L01-L02 **Vehicles**

L01-L03 **Laboratory**

L01-L04 **Electrical and electronic**

L01-L05 **Optical**
Including fibres.

L01-L06 **Packaging**
Including bottling, etc.

L01-L07 **Medicinal/Dental uses**
2002

L01-L08 **Household/office use**
Includes tableware, furniture etc.
2010

L01-L **Unclassified**

L01-M **TESTING OF GLASS**
Includes all measuring during processing of glass.
2005

L02 REFRACTORIES, CERAMICS, CEMENT

The heading "Cements" (L02-C) refers to the chemical composition and preparation of hydraulic inorganic materials prior to addition of water. The heading "Concretes" (L02-D) refers to the same materials after addition of water despite the fact that they are often called "cements" when in the wet state.

L02 **Refractories, ceramics, cement general**
1986

L02-A **MANUFACTURING METHODS, EQUIPMENT**

L02-A01 **General**

L02-A02 **Raw material preparation and treatment**
Including powder, paste or slurry production, calcination and presintering of powders.

L02-A02A **. Sol gel techniques**
Ceramic manufacture by sol gel.
1994

L02-A02B **. PVD, CVD and sputtering techniques**
e.g. to form diamond films.
1994

L02-A02C **. Foaming**
Includes forming porous ceramics. For lightweight concretes, see L02-D03.
2011

L02-A03 **Shaping, drying**
Including slip casting, clay extrusion, pressing, moulding.

L02-A03A **. Mould release agent**
2011

L02-A04 **Sintering, firing, hot-pressing, hot extrusion**
Including kiln furniture.

L02-A05 **Melting and casting**
Including fusion of ceramics, but see L02-A03 for slip casting.

L02-A06 **Flame and plasma spraying**

L02-A07 **Decorating and glazing**

L02-A08 **Testing/control**

L02-A09 **Single crystal growing (ceramics)**
1972

L02-A10 **Cleaning**
2010

L02-A11 **Cutting/welding**
2010

L02-A12 **Surface treatment**
Includes etching, marking, engraving and polishing.
2010

L02-A13 **Ceramic waste treatment/reuse/recycling**
2011

L02-A14 **Nanomaterials**
2011

L02-A **Unclassified**

L02-B **PREPARATION OF MATERIALS**
Include novel compositions and treatment of these materials.

L02-B01 **Lime(stone)**

L02-B02 **Magnesia and dolomite**

L02-B03 **Slags**

L02-B04 **By-products of lime and magnesia**

L02-B05 **Expanded clay**
1972

L02-B06 **Other clays**
1972

L02-B07 **Asbestos**
Including disposal of waste products.
1972

L02-B08 **Mineral fibres**
e.g. from ceramic oxides, ores, rocks.
1972

L02-B **Unclassified**

L02-C **CEMENTS**

L02-C01 **General**
1970-1986

L02-C02 **Portland; apparatus for manufacture of cements from raw materials**

L02-C03 **Portland clinker, Pozzuolanic, slag and waste product**

L02-C04 **Magnesium**
Includes magnesium compounds.

L02-C05 **Calcium sulphate**

L02-C06 **Complex for special purposes**

L02-C07 **Alumina (5% alumina)**
1972

L02-C08 **Cement additives**
1972

L02-C **Unclassified**

L02-D **MORTARS, CONCRETES**

L02-D01 **Mortars and plasters**
Including stuccos, grouts, trowellable mortars, mine filling compsns.

L02-D02 **Heavy concretes; apparatus for manufacture of concrete, mixers, shuttering, mould release agents, lubricants**

L02-D03 **Light concretes**
e.g. containing pore formers.

L02-D04 **Prefabricated concrete**
Concrete articles, pipes, blocks, autoclaving equipment.

L02-D04A . **Compositions**
1986

L02-D04B . **Methods**
1986

L02-D04C . **Apparatus**
1986

L02-D04D . **Products**
1986

L02-D05 **Reinforced and pre-stressed concretes and mortars**
Steel and glass fibre reinforced and pre-stressed concretes. From 2010 this code has been expanded to include reinforced and pre-stressed mortars.

L02-D06 **Concretes made with special fillers (based on Portland cement only)**

L02-D07 **Concretes and artificial stone (other than from Portland cement)**

L02-D07A . **Gypsum products**
Including plaster board, plaster modelling.
1977

L02-D07B . **Resin concretes**
1977

L02-D08 **Testing methods**

L02-D09 **Artificial floors and surfaces**
Road, paving, sporting surfaces and floors and their subgrades. Includes artificial roofing.

L02-D10 **Bitumastic compositions**
1972

L02-D11 **Asbestos and mineral fibre products**
1972

L02-D12 **Soil consolidation**

L02-D12A **. Cementing and sealing compositions for oil and gas wells**
See also H01-C02B.
2005

L02-D13 **Aggregates**
1972

L02-D13A **. Fillers**
e.g. fly ash etc.
1994

L02-D14 **Concrete additives and coatings**
Include additives for mortars.
1972

L02-D14A **. Concrete set accelerators, retarders, activators**
1986

L02-D14B **. Concrete strengthening additives**
1986

L02-D14C **. Frost resistance imparting additives**
1986

L02-D14D **. Water reducing additives (to reduce amount of water needed for making concrete)**
1986

L02-D14E **. Plasticising and fluidising additives**
1986

L02-D14F **. Polymeric additives**
1986

L02-D14G **. Corrosion inhibiting agents**
2012

L02-D14H **. Biological additives e.g. fungicides**
2012

L02-D14M **. Polymeric and organic coatings and impregnants for concrete**
1986

L02-D14N **. Inorganic coatings and impregnants for concrete**
1986

L02-D14P **. Decorative coatings and additives for concretes**
1986

L02-D14Q **. Water permeability retarding layers and additives**
1986

L02-D14R **. Paints**
1994

L02-D14S **. Antifoaming additive**
2011

L02-D15 **Sound and thermal insulation**
Including acoustic and thermal insulation based on inorganic materials, fire protecting panels.
1972

L02-D15A **. Fire resistance boards, blocks, blankets etc.**
Includes all products.
1986

L02-D15A1 **.. Fireproof materials**
2011

L02-D15B **. Thermal and acoustic insulating boards**
1986

L02-D15C **. Thermal and acoustic insulating flexible sheeting**
1986

L02-D15D **. Thermal and acoustic insulating material compositions**
1986

L02-D15E **. Other thermal and acoustic insulating products**
2011

L02-D **Unclassified**

L02-E **REFRACTORIES**
Acid refractories are considered as more acid than mullite or forsterite, basic refractories, more basic than mullite or forsterite. Neutral refractories include intermediate acidity materials such as Al2O3, ZrO2, carbides, nitrides, etc.

L02-E01 **General**

L02-E02 **Fireclay and diatomaceous**

L02-E03 **Acid**

L02-E04 **Basic**

L02-E05 **Mouldables, castables and coatings**

L02-E06 **Core materials**
Includes refractory hot tops, linings and blast furnace tap hole seals.

L02-E07 **Carbon and carbon-contg.**
Takes precedence over L02-E03 and L02-E04.

L02-E08 **Fused and cast**

L02-E09 **Amphoteric and neutral**

L02-E **Unclassified**

L02-F **ABRASIVES (INCLUDING FRICTION MATERIALS FOR CLUTCHES AND BRAKES)**
1994

L02-F01 **General (including binders)**
1994

L02-F02 **Rouges**
Including oxides other than L02-F04.

L02-F03 **Carbides, silicides, nitrides**
Including abrasive tools using these materials.

L02-F04 **Harsh oxides (Moh's hardness >6)**

L02-F05 **Carbon**

L02-F05A . **Diamond**
Including abrasive tools using diamond.
2002

L02-F05B . **Graphite**
2002

L02-F05C . **Carbon fibres**
2002

L02-F06 **Automotive uses**
2002

L02-F **Unclassified**

L02-G **OXIDE CERAMICS**

L02-G01 **Inorganic Oxides**
Includes materials and products made therefrom, e.g. catalyst supports, molecular sieves, filters, diaphragms and membranes. For preparation methods see L02-G12. Until 200601 code entitled "General".

L02-G01A . **Alumina**
Includes aluminates, aluminosilicates, zeolites. See L02-G11 for production.
2002

L02-G01B . **Silica**
2002

L02-G01B1 .. **Metal silicates**
2006

L02-G01C . **Rare earth oxides**
Until 200601, code entitled 'yttria' After 200601 this code is the general code representing 'rare earth oxides' whereas specific codes L02-G01C1 now represents 'yttria' and L02-G01C2 represents 'ceria'.
2002

L02-G01C1 .. **Yttria**
2006

L02-G01C2 .. **Ceria**
2006

L02-G01D . **Zirconia**
Includes zirconates.
2002

L02-G01E . **Titania**
Includes titanates.
2006

L02-G01F . **Zinc oxides**
2006

L02-G01M . **Mixed metal oxides**
Includes metallates.
2006

L02-G01M1 .. **Metal titanates**
2006

L02-G01X . **Other inorganic oxides**
2006

L02-G02 **Heavy clay products**

L02-G03 **Whiteware**

L02-G03A . **Porcelains**
Including dental porcelains.
1972

L02-G03A1 .. **Prostheses, hydroxyapatite, artificial bone**
2002

L02-G04 **Colours**

L02-G05 **Electrical insulators**
Including preparation of mica, mica sheet, insulators for power lines, ceramic substrates and ceramic encapsulating compositions.

L02-G06 **Thermal and acoustic insulators**
Including thermal insulating material prepared by firing a ceramic only. For all other thermal insulating material see L02-D15.

L02-G07 **Electronic ceramics, general**
Novel oxides for electrical purposes, prepn. methods of conventional oxides. Ferroelastic materials are coded with ferroelectric materials.

L02-G07A . **Magnetic compositions**
1972

L02-G07B . **Piezoelectrics**
1972

L02-G07C . **High permittivity compositions**
1972

L02-G07D . **Resistive oxide compositions, semiconductive oxide compositions**
See L03-B01A for zinc oxide based ceramic varistors.
1972

L02-G07E . **Conductive ceramics**
2002

L02-G08 **Wear resistant ceramics, lubricants**
Including friction materials and artificial and natural oxide gemstones.

L02-G09 **Nuclear ceramics**

L02-G10 **Ceramics for optical purposes, general**

L02-G10A **. Luminescent and fluorescent compositions**
1972

L02-G10B **. Laser compositions**
2010

L02-G11 **Alumina preparation (from raw materials)**
Includes production of aluminates, aluminosilicates, zeolites.
1972

L02-G12 **Other oxide preparation**
For manufacture of materials and products made therefrom. See L02-G01 for claimed materials and products. L02-B01 (calcia), L02-B02 (magnesia), L02-G07 (conductive oxides), L02-G11 (alumina, aluminosilicates, zeolite) take preference. This code (and subcodes) have always been used for preparation of oxides.
1972

L02-G12A **. Titania**
Includes titanates.
2006

L02-G12B **. Zirconia**
Includes zirconates.
2006

L02-G12C **. Zinc oxides**
2006

L02-G12D **. Rare earth oxides**
2006

L02-G12D1 **.. Yttria**
2006

L02-G12D2 **.. Ceria**
2006

L02-G12E **. Silica**
2006

L02-G12E1 **.. Metal silicates**
2006

L02-G12M **. Mixed metal oxides**
Includes metallates.
2006

L02-G12M1 **.. Metal titanates**
2006

L02-G12X **. Other inorganic oxides**
2006

L02-G **Unclassified**
Including 'technical' ceramics.

L02-H **NON-OXIDE CERAMICS**

L02-H01 **General**

L02-H02 **Carbides, borides, nitrides, silicides, (general)**

L02-H02A **. Carbides**
1972

L02-H02B **. Borides, nitrides, silicides**
1972

L02-H02B1 **.. Borides**
1972

L02-H02B2 **.. Nitrides**
1972

L02-H02B3 **.. Silicides**
1972

L02-H03 **Sulfides, phosphides (novel compositions only)**

L02-H04 **Carbon and graphite, general**
See also J04-F.

L02-H04A **. Carbon fibres**
1972

L02-H04B **. Carbon nanostructures**
Including fullerenes and nanotubes.
2002

L02-H05 **Arsenides, selenides, tellurides (novel compositions only)**

L02-H **Unclassified**
Including halides.

L02-J **CERAMIC COMPOSITES**

L02-J01 **Metal/ceramic composites**

L02-J01A **. Metallised ceramic**

L02-J01B **. Cermets**
Including cermet cutting tools.

L02-J01C **. Ceramic/metal seals**

L02-J01D **. Ceramic fibre reinforced metal**

L02-J01E **. Ceramic coating on metal**

L02-J02 **Non-metal/ceramic composites**

L02-J02A **. Ceramic/glass**

L02-J02B **. Ceramic/plastics**

L02-J02C **. Dissimilar ceramics**

L02-J03 **Powder coatings**
May be used with other L02-J codes, and see M13-H04A.
2006

L02-J **Unclassified**
1972

L02-K	**APPLICATIONS OF CERAMICS**
L02-K01	**Household use** **2011**
L02-K02	**Medical/dental** **2011**
L02-K03	**Industrial applications** Includes use of ceramics in these following fields: oil and gas, petroleum, seismic, nuclear, metallurgy, construction, vehicles and aerospace. Can also be used for ceramic material used as filter for molten metal. **2025**
L02-K09	**Other applications of ceramics** **2025**

L03 ELECTRO-(IN)ORGANIC

L03-A	**CONDUCTORS AND INSULATORS**
L03-A01	**Mainly metals and alloys**
L03-A01A	**. Non-insulated (conducting alloys, contacts, conductive inks and pastes)**
L03-A01A1	**.. Silver (alloy) contacts and electrodes** For contacts or electrodes used in specific applications which cannot be catered for elsewhere. **1986**
L03-A01A2	**.. Other metal/alloy contacts and electrodes** For contacts or electrodes used in specific applications which cannot be catered for elsewhere. **1986**
L03-A01A3	**.. Conductive pastes including polymers filled with conductive metal** **1986**
L03-A01A4	**.. Sliding contacts, pantographs etc.** **1986**
L03-A01A5	**.. Conductive alloy compositions** **1986**
L03-A01A6	**.. Nanomaterials** **2010**
L03-A01B	**. Conductors, metal, insulated**
L03-A01B1	**.. Cables** **1986**
L03-A01B2	**.. Joining cables** **1986**
L03-A01B3	**.. Insulated wire** **1986**
L03-A01B4	**.. Insulating oils for cables** **1986**
L03-A01B5	**.. Preparation of leads and terminals** **1986**
L03-A01B6	**.. Soldering, brazing, welding, thermo-compression bonding** See L04-C17A for soldering of semiconductors and L03-H04E6 for soldering of printed circuits. **1986**
L03-A01B7	**.. Wire harness** **2012**
L03-A01C	**. Superconductors** **1972**
L03-A01C1	**.. Metallic superconductors** **2002**

L03-A01C1A **... Nb superconductors**
2002

L03-A01C2 **.. Ceramic superconductors**
2002

L03-A01C2A **... Perovskite superconductors**
2002

L03-A01C2B **... YBCO superconductors**
2002

L03-A01C3 **.. Organic superconductors**
2002

L03-A01C4 **.. Nanomaterials**
Use this code in conjunction with other L03-A01C codes.
2013

L03-A02 **Non metal conductors**

L03-A02A **. Non-insulated non-metal conductors**

L03-A02B **. Carbon and graphite**
1986

L03-A02C **. Ion conductive solids**
1986

L03-A02C1 **.. Indium-tin oxide (ITO)**
2002

L03-A02D **. Conductive polymers**
1986

L03-A02E **. Polymers filled with non-metallic conductive materials**
1986

L03-A02G **. Conductive nanomaterials**
Includes nanotube, nanowire manufacture. See also L02-H04B for carbon nanostructures.
1986

L03-A03 **Insulators**
Including electrical insulating compositions not codable in L02-G05.
2002

L03-A03A **. Organic insulators**
2002

L03-A03B **. Inorganic insulators**
2002

L03-A03N **. Nanomaterials**
2011

L03-A **Unclassified**

L03-B **RESISTORS, MAGNETS, CAPACITORS, SWITCHES**

L03-B01 **Resistors, fixed or adjustable - general**

L03-B01A **. Variable resistors**
1972

L03-B01A1 **.. Varistors**
1986

L03-B01A2 **.. Thermistors (heat sensitive resistors)**
1986

L03-B01A3 **.. Humidity sensitive resistors**
1986

L03-B01A4 **.. Gas sensitive resistors**
1986

L03-B01B **. Fixed resistors**
1972

L03-B01C **. Thick film resistive compositions**
1972

L03-B02 **Magnets, inductances, transformers, etc., general**
For magnetic tape compsns. discs, lubricants, etc. see L03-B05 from 198601.

L03-B02A **. Magnetic metals, alloys**
1972

L03-B02A1 **.. Iron-based powder cores and powders**
1986

L03-B02A2 **.. Iron based alloys**
L03-B02A5 takes precedence.
1986

L03-B02A3 **.. Electric steels**
Including silicon steels.
1986

L03-B02A4 **.. Nickel and cobalt-based alloys**
L03-B02A5 takes precedence.
1986

L03-B02A5 **.. Rare earth nickel/cobalt/iron alloys**
1986

L03-B02A6 **.. Other alloys**
1986

L03-B02B **. Magnetic non-metals, general**
1972

L03-B02B1 **.. Barium ferrite based compsns.**
1986

L03-B02B2 **.. Other ferrites**
1986

L03-B02B3 **.. Garnets**
1986

L03-B02B4 **.. Magnetic polymers; plastics**
Includes organic magnetic materials.
2009

L03-B02B4A **... Magnetic polymer composite particles**
Excludes magnetic pigments for recording which is covered in L03-B05D1.
2009

L03-B02B5 **.. Magnetic liquid compositions**
2009

L03-B02B5A **... Ferrofluids; magnetic colloids**
2009

L03-B02B5B **... Magnetorheological fluids; magnetoviscous**
2009

L03-B02B6 **.. Other magnetic material compositions**
Excludes magnetic recording.
2009

L03-B02B6A **... Inorganic composite magnetic particles**
Excludes magnetic pigments for recording which is covered in L03-B05D1.
2009

L03-B02C **. Inductances**
Including insulating oils for inductors.
1972

L03-B02D **. Transformers**
Including insulating oils for transformers.
1972

L03-B02E **. Motors**
1986

L03-B02F **. Coils**
1986

L03-B02G **. Medical or pharmaceutical industry applications**
2009

L03-B02H **. Magnetic inks, paints, lacquers**
2009

L03-B02J **. Engineering; automotive applications**
2009

L03-B02M **. Magnetic memory**
See also L04-E15 for semiconductor memory.
2011

L03-B02N **. Nanomagnetic materials**
2012

L03-B02X **. Other applications of magnets or magnetic compositions**
Excludes magnetic recording which is covered in L03-B05.
2009

L03-B03 **Capacitors and capacitive devices - general**
Including electrets, condensers.

L03-B03A **. Electrolytic capacitors**
1972

L03-B03B **. Monolithic capacitors**
1972

L03-B03C **. Thick/thin film capacitive compositions**
1972

L03-B03D **. Other capacitors, fixed/variable**
1972

L03-B03E **. Inorganic dielectric compositions**
1986

L03-B03F **. Organic dielectric compositions**
1986

L03-B03G **. Capacitor electrodes**
2002

L03-B03G1 **.. Inorganic capacitor electrodes**
2007

L03-B03G2 **.. Metallic capacitor electrodes**
2011

L03-B03H **. Capacitor electrolytes**
2006

L03-B03J **. Multilayer capacitors**
2007

L03-B04 **Electric switches, relays, protective devices**
Including arc suppressing gases, commutators, surge arresters.

L03-B04A **. Switches**
1986

L03-B04B **. Relays and contact breakers**
1986

L03-B04C **. Commutators**
1986

L03-B04D **. Fuses**
1986

L03-B04E **. Lightning arresters and surge absorbers**
1986

L03-B05 **Magnetic recording**
Covered by L03-B02 prior to 198601.
1986

L03-B05A **. Magnetic tapes**
1986

L03-B05B **. Magnetic plates, discs**
1986

L03-B05C **. Other recording media**
1986

L03-B05D **. Magnetic layers, dispersions**
1986

L03-B05D1 **.. Magnetic pigments**
1986

L03-B05D2 **.. After treatment of magnetic pigments**
1986

L03-B05D3 **.. Non magnetic additives**
1986

L03-B05D4 .. **Binders for magnetic layers and dispersions**
1986

L03-B05E . **Magnetic layers, metal plating**
1986

L03-B05F . **Magneto-optical and thermo-magnetic layers**
1986

L03-B05G . **Magnetic layers for vertical recording**
1986

L03-B05H . **Magnetic layers for security documents etc.**
1986

L03-B05J . **Magnetic layers general and unspecified**
1986

L03-B05K . **Non-magnetic layers**
1986

L03-B05K1 .. **Protective**
1986

L03-B05K2 .. **Backing**
1986

L03-B05K3 .. **Lubricant**
1986

L03-B05L . **Supports for magnetic layers**
1986

L03-B05L1 .. **Polymeric**
1986

L03-B05L2 .. **Metal**
1986

L03-B05L3 .. **Coatings forming part of the support**
1986

L03-B05M . **Magnetic heads**
1986

L03-B05N . **Non-magnetic gap fillers for magnetic heads**
1986

L03-B05W . **Magnetic writer**
2012

L03-B06 **Magnetic cores**
Including bubbles and dots.
1986

L03-C **ELECTRIC DISCHARGE LAMPS AND TUBES, INCANDESCENT LAMPS**

L03-C01 **Non-emissive electrodes and materials therefor, getters**

L03-C02 **Emissive electrodes and materials for discharge tubes and lamps, general**

L03-C02A . **Electrodes**
Including photo-cathodes and target cathodes.
1972

L03-C02B . **Fluorescent compositions for TV screens**
1972

L03-C02C . **Luminescent compositions for tube surfaces**
Including fluorescers for diodes, etc.
1972

L03-C02D . **Vapour fillings and additives**
1972

L03-C03 **Electrode supports, mountings, envelopes, bases, common to valves and/or C.R. tubes, X-ray tubes, etc.**
Including designs for tubes and valves. Also vidicon tubes.

L03-C03A . **Electrode supports, seals and mountings**
Covers materials and methods of manufacture.
2005

L03-C03B . **CRT shadow masks**
Covers materials and manufacturing techniques e.g. etching.
2005

L03-C04 **Incandescent and luminescent screens, discharge tube envelopes, etc. – general**
Includes fluorescent and discharge lamps.

L03-C04A . **Incandescent and luminous screens**

L03-C04B . **Tubes manufacture**

L03-C05 **Electric incandescent lamps**

L03-C05A . **Seals and mountings**
Covers sealing and mounting materials and methods for incandescent lamps.
2005

L03-C05B . **Filaments and fillings**
Covers filament materials and filling gases for incandescent lamps.
2005

L03-C05C . **Lamp envelopes**
Covers envelope materials and manufacturing methods for incandescent lamps.
2005

L03-C06 **LED lamps**
2011

L03-C **Unclassified**
Including electron multiplier tubes dynodes, short arc fluorescent lamps.

L03-D **SEMICONDUCTOR, PIEZOELECTRIC, THERMOOPTIC, OPTO-ELECTRONIC MATERIALS AND DEVICES**
From 198601, the scope of L03-D02+, L03-D03+, L03-D04+ and L03-D05+ codes which terminated in 1985 are covered by L04+ codes. Scope of all remaining L03-D codes are now covered in L03-G from 200501.
1972-2004

L03-D01 **Materials, general**
Including pyroelectric materials.
1972-2004

L03-D01A **. Semiconductor materials**
1972-1985

L03-D01B **. Piezoelectric materials**
Scope now covered in L03-G09A.
1972-2004

L03-D01C **. Thermo-optic materials**
Scope now covered in L03-G09D.
1972-2004

L03-D01D **. Opto-electronic materials**
1972-2004

L03-D01D1 **.. Liquid crystal compounds**
Scope now covered in L03-G05B1.
1986-2004

L03-D01D2 **.. Liquid crystal material mixtures**
Scope now covered in L03-G05B2.
1986-2004

L03-D01D3 **.. Additives for liquid crystal materials**
Scope now covered in L03-G05B4.
1986-2004

L03-D01E **. Electro-rheological fluids**
Scope now covered in L03-G09F.
1994-2004

L03-D02 **Producing semiconductors, doping - general**
1970-1985

L03-D02A **. Single crystal growth**
Semiconducting materials only; does not include epitaxial layer production.
1972-1985

L03-D02B **. Zone refining**
1972-1985

L03-D02C **. Doping**
1972-1985

L03-D03 **Producing semiconductor devices using L03-D01 materials - general**
1972-1985

L03-D03A **. Doped layers on a substrate**
Including epitaxial layer production of single crystals.
1972-1985

L03-D03B **. Masking techniques**
1972-1985

L03-D03C **. Etching, slicing, and dicing**
1972-1985

L03-D03D **. Insulating and conductive layer production**
1972-1985

L03-D03E **. Production of complete devices**
Unspecified devices only, otherwise L03-D04:
1972-1985

L03-D03F **. Soldering, thermo-compression bonding**
Including soldering of any electronic component.
1972-1985

L03-D03G **. Encapsulation**
Including passivation and partial encapsulation.
1972-1985

L03-D03H **. Undoped layers on a substrate**
Including epitaxial layer production of single crystals.
1977-1985

L03-D04 **Devices - general**
Including Hall effect and Pockels cell devices and electro-optical devices. From 200501, Scope covered in L03-G10.
1972-2004

L03-D04A **. Transistors**
1972-1985

L03-D04B **. Diodes, rectifiers**
Including LEDs, light-emitting semiconductive devices and arrays.
1972-1985

L03-D04C **. Thyristors**
1972-1985

L03-D04D . **Electromechanical transducers**
Including mechano-electrical transducers (but see L03-H03 for speaker cones); also including ferro-elastic devices. Scope covered in L03-G10 from 200501.
1972-2004

L03-D04E . **Radiation sensitive devices**
Including thermo-piles, photoelectric cells.
1972-1985

L03-D04F . **Image converters**
Including image intensifiers. Scope covered in L03-G10.
1972-2004

L03-D04G . **Thermo-optical devices**
Including thermal printing heads Scope now covered in L03-G10B, C and D.
1972-2004

L03-D05 **Sealing devices in housings**
1970-1985

L03-D05A . **Materials for device housings - e.g. polymers for general electrical/electronic usage**
Including thermal printing heads.
1994-2004

L03-D **Unclassified**

L03-E **BATTERIES, ACCUMULATORS, THERMOELECTRIC ELEMENTS**

L03-E01 **Components of primary and secondary cells - general**
Components take precedence over cell type unless more than two components are claimed.

L03-E01A . **Separators**
1972

L03-E01B . **Electrodes**
1972

L03-E01B1 .. **Lead electrodes**
1977

L03-E01B2 .. **Air or oxygen electrodes**
1977

L03-E01B3 .. **Graphite electrodes**
1986

L03-E01B4 .. **Nickel and cadmium electrodes**
1986

L03-E01B4A ... **Ni electrodes for NiCd batteries**
2002

L03-E01B4B ... **Cd electrodes**
2002

L03-E01B4C ... **Ni MH electrodes**
Includes H2 storage alloys.
2002

L03-E01B5 .. **Alkali metal electrodes and unspecified electrodes for alkaline cells**
1986

L03-E01B5A ... **Manganese oxide electrodes**
Includes electrodes for alkaline manganese cells.
2002

L03-E01B5B ... **Lithium electrodes**
Include novel electrodes for lithium cells. For lithium manganate see L03-E01B5C.
2002

L03-E01B5C ... **Lithium manganate electrodes**
2002

L03-E01B5D ... **Sodium-sulfur electrodes**
2002

L03-E01B6 .. **Zinc and zinc oxide electrode**
1986

L03-E01B7 .. **Silver and silver oxide electrodes**
1986

L03-E01B8 .. **Other inorganic electrodes**
1986

L03-E01B8A ... **Other inorganic oxide electrodes**
2002

L03-E01B9 .. **Organic electrodes**
1986

L03-E01B9A ... **Polymer electrodes**
2002

L03-E01C . **Electrolytes**
1972

L03-E01C1 .. **Aqueous electrolytes**
2002

L03-E01C2 .. **Non-aqueous electrolytes**
2002

L03-E01C3 .. **Solid electrolytes**
2002

L03-E01C4 .. **Liquid electrolytes**
2002

L03-E01C5 .. **Molten/fused electrolytes**
2002

L03-E01D . **Other components**
1972

L03-E01D1 .. **Cases**
2002

L03-E01D2 .. **Terminals**
2002

L03-E01D3 .. **Seals**
2002

L03-E01D4 .. **Connectors**
See also X16-F05.
2011

L03-E01D5 .. **Carriers, plates**
Includes current collector, grid, support, charge and frame.
2011

L03-E01D6 .. **Battery packs**
2011

L03-E02 **Primary cells**

L03-E03 **Secondary cells**
e.g. accumulator, storage battery, storage cell, charge-discharge cycles.

L03-E04 **Fuel cells**

L03-E04A . **Solid electrolyte cells**
Including beta-Al2O3 for Na-S cells.

L03-E04A1 .. **Solid oxide electrolyte cells**
2002

L03-E04A2 .. **Solid polymer electrolyte cells**
2002

L03-E04B . **Fuel cell electrodes**
2002

L03-E04B1 .. **Catalyst electrodes**
See also J04-E04D.
2006

L03-E04B2 .. **Membrane electrodes**
2007

L03-E04C . **Molten carbonate fuel cells**
2002

L03-E04D . **Alkaline fuel cells**
2002

L03-E04E . **Phosphoric acid fuel cells**
2002

L03-E04F . **Hydrogen oxygen fuel cells**
2002

L03-E04G . **Fuel cell separators**
2002

L03-E04H . **Production of fuel cell and components**
Include assembling of fuel cells.
2005

L03-E04H1 .. **Production of fuel cell separators**
2006

L03-E04H2 .. **Production of fuel cell electrodes**
Includes preparation of electrode materials.
2006

L03-E04H3 .. **Production of other fuel cell components**
Includes electrolyte manufacture.
2005

L03-E04I . **Hydrogen generation**
2006

L03-E04J . **Hydrogen storage materials/facility**
2007

L03-E04K . **Biofuel cell**
2011

L03-E04L . **Flow field plate**
2011

L03-E04P . **Gas diffusion layers**
2012

L03-E05 **Other direct energy conversion devices**

L03-E05A . **Thermocouples**
1972

L03-E05B . **Solar cells**
1986

L03-E05B1 .. **Dye-sensitized solar cells**
2011

L03-E05B1A ... **Dye material**
2011

L03-E05B2 .. **Electrode structure/materials**
2013

L03-E05C . **Gas sensors - i.e. those which are not gas-sensitive resistors**
1994

L03-E05D . **Hybrid cells**
2002

L03-E05D1 .. **Electrodes**
2002

L03-E05D2 .. **Metal-air hybrid cells**
2002

L03-E05D3 .. **Metal-halogen hybrid cells**
2002

L03-E06 **Reclamation and disposal**
See also relevant electrode code.
2002

L03-E07 **Testing batteries and fuel cells**
2002

L03-E08 **Production of battery and components**
See also relevant electrode code. Include apparatus for manufacturing battery and its components. Include assembling of batteries.
2006

L03-E08A . **Production of separators**
2006

L03-E08B . **Production of electrodes**
Include preparation of electrode materials.
2006

L03-E08C . **Production of other components**
E.g. cases, terminals and seals. Also includes electrolyte manufacture.
2006

L03-E09 **Recharging batteries**
E.g. processes or apparatus for recharging. Only if sufficient chemical interest. See also X16-G.
2006

L03-E10 **Repairing batteries**
2011

L03-E **Unclassified**

L03-F **STIMULATED RADIATION-EMISSION DEVICES**

L03-F01 **Masers**

L03-F02 **Lasers, general**

L03-F02A . **Compositions**
1972

L03-F02A1 .. **Gaseous laser compositions**
2002

L03-F02A2 .. **Solid laser compositions**
Includes YAG, Ruby.
2002

L03-F02A3 .. **Dye laser**
2011

L03-F02B . **Construction and design**
1972

L03-F **Unclassified**
1972

L03-G **OTHER BASIC ELECTR(ON)IC ELEMENTS AND MATERIALS**

L03-G01 **Delay lines**
1972

L03-G02 **Wave guides**
Includes optical fibre waveguides. Also include optical components which cannot be coded more specifically below.
1972

L03-G02A . **Polarisers**
2002

L03-G02B . **Optical filters**
2002

L03-G02C . **Attenuators**
2002

L03-G02D . **Components for optoelectronic circuits**
2002

L03-G02E . **Antireflective coating**
See L04-C05A for antireflective coating compositions used in semiconductor patterning.
2011

L03-G02F . **Optical switch**
2012

L03-G02G . **Reflectors**
2013

L03-G03 **Coulometers**
1972

L03-G04 **Optical memory and storage elements**
Covers optical discs and holographic media.
1972

L03-G04A . **Semiconductor memory elements**
Scope now covered by L04-E15.
1986-2004

L03-G04B . **Optical memory elements**
For magnetic and magneto-optical memory elements see L03-B05.
1986

L03-G04B1 .. **Dyes and pigments for recordable discs**
2005

L03-G04B2 .. **Alloy compositions for recordable discs**
For dynamic e.g. phase change optical disk memory using e.g. GeSbTe alloys. See also T03-B01B5G.
2005

L03-G04B3 .. **Substrates for optical discs**
2005

L03-G04B4 .. **Coatings for recordable discs**
2005

L03-G04B5 .. **Optical cards**
2011

L03-G04B9 .. **Materials for holographic applications**
2005

L03-G05 **Display devices**
Including arrays.
1972

L03-G05A . **Liquid crystal display devices**
But see L03-D01D for liquid crystal materials.
1986

L03-G05A1 .. **LCD panels**
2002

L03-G05A2 .. **Light valves**
2002

L03-G05A3 .. **Backlight units**
2010

L03-G05B . **Materials and components for LCDs display devices**
1986

L03-G05B1 .. **Novel liquid crystal compounds**
2005

L03-G05B2 .. **Liquid crystal compositions**
2005

L03-G05B3 .. **Dyes for liquid crystal compounds**
2005

L03-G05B4 .. **Aligning agents and other additives for LC compositions**
2005

L03-G05B5 .. **Substrates and spacers for LCDs**
2005

L03-G05B5A ... **Sealant materials involving resins used in display materials**
2007

L03-G05B6 .. **Transistors for LCDs**
2005

L03-G05B7 .. **Filters and polarisers**
2005

L03-G05B7A ... **Colour filters**
See L03-G02 for colour filters not used in LCDs.
2005

L03-G05B7B ... **Polarisers**
2005

L03-G05B8 .. **Alignment layers**
2005

L03-G05B9 .. **Conductive films and other components for LCDs**
2005

L03-G05C . **Electrochromic display devices**
1986

L03-G05C1 .. **Electrochromic materials**
2005

L03-G05C2 .. **Other materials for electrochromic devices**
Includes e.g. polymer or ceramic sealants or glass layers.
2005

L03-G05D . **Field emission displays (FED)**
2002

L03-G05E . **Plasma displays (PDP)**
2002

L03-G05F . **Electroluminescent displays (EL) and devices**
Includes electrodes.
2002

L03-G05F1 .. **Electroluminescent materials**
2005

L03-G05F2 .. **Other materials for EL devices**
Includes e.g. polymer or ceramic sealants or glass layers.
2005

L03-G05G . **Electrophoretic displays and materials**
2005

L03-G05H . **Magnetophoretic display**
2010

L03-G05I . **Capacitive touch panel**
2011

L03-G05J . **Electrowetting display**
2011

L03-G05K . **LED display**
2011

L03-G06 **Electromagnetic shielding**
2002

L03-G07 **Heat sinks**
2002

L03-G09 **Other electro(in)organic materials**
For materials used in specific applications not catered for elsewhere, e.g. GeSbTe for solid state phase change memory, in which case also apply L04-E15. See U14-A03H and U12-B02.
2005

L03-G09A . **Piezoelectric**
2005

L03-G09A1 .. **Inorganic**
Covers e.g. lead zirconium titanates (PZT) etc.
2005

L03-G09A2 .. **Organic**
Covers e.g. polyvinylidene fluoride (PVdF) etc.
2005

L03-G09B . **Ferroelectric and ferroelastic**
2005

L03-G09C . **Pyroelectric**
From 2010 thermoelectric material has been transferred to L03-G09T.
2005

L03-G09D . **Thermooptical**
2005

L03-G09E . **Other optoelectronic materials**
Includes other non-linear optical materials not covered above. From 2006 this code has been expanded to included all other optoelectronic materials including non-linear optical materials.
2005

L03-G09F . **Electrorheological**
2005

L03-G09G . **Fluorescent and luminescent materials for semiconductor manufacture**
Used in e.g. LEDs, lasers.
2007

L03-G09H . **Electrostrictive**
2010

L03-G09I . **Magnetostrictive**
2010

L03-G09J . **Photoelectric**
2010

L03-G09L . **Magnetoresistive**
2011

L03-G09M . **Thermomagnetic**
Excludes recording materials.
2011

L03-G09P . **Photoresist**
Excludes photoresist for PCB and semiconductor device manufacture. Includes resist for printer or LCD manufacture.
2010

L03-G09R . **Photochromic**
2011

L03-G09S . **Spintronic**
2012

L03-G09T . **Thermoelectric**
2010

L03-G09U . **Radiation sensitive materials**
For image recording.
2012

L03-G09V . **Other fluorescent/luminescent materials**
Includes fluorescent and luminescent materials used for devices other than semiconductor and discharge lamps/tubes. Also includes scintillator material compositions.
2012

L03-G09X . **Ink jet recording ink**
For ink jet recording methods.
2014

L03-G09Z . **Zero expansion materials**
2012

L03-G10 **Other electronic devices**
For specific devices not catered for elsewhere where the materials aspect is important.
2005

L03-G10A . **Piezoelectric transducers**
See also V06 codes for specific details. For MEMS see L03-G10M.
2005

L03-G10A1 .. **Inkjet heads**
2005

L03-G10A2 .. **Motors e.g. USM**
2005

L03-G10B . **Thermal inkjet printing heads**
2005

L03-G10C . **Thermal printing heads**
e.g. as used by dye sublimation printers.
2005

L03-G10D . **Other thermo-optical devices**
2005

L03-G10E . **Image converters and intensifiers**
2005

L03-G10F . **Electro-optical devices**
2011

L03-G10J . **Electrowetting devices**
2011

L03-G10M . **MEMS**
2011

L03-G10S . **Scintillator**
2011

L03-G10T . **Spintronic devices**
Includes spintronic-optical and spintronic-magnetic devices.
2012

L03-G **Unclassified**

L03-H **APPLICATIONS**

L03-H01 **Generation, conversion, distribution**
Including MHD generation, triboelectric devices.

L03-H02 **Basic electronic circuitry**
Including lead frames for semiconductor networks and hybrid devices.

L03-H03 **Electric communications techniques - general**
Including speaker cones.

L03-H03A . **Data storage units, computers**
1972

L03-H03B . **Bio- and neuro-computers**
1994

L03-H04 **Electrical general**

L03-H04A . **Electrical heating and lighting**
Including resistive and other space heaters, storage heaters.

L03-H04B . **Static/antistatic electricity**

L03-H04C . **X-ray techniques**
Including tube fluorescers, image intensifiers and electrodes.

L03-H04D **. Plasma techniques, particle accelerators**
Including magnetrons.

L03-H04E **. Printed circuits and racks - general**

L03-H04E1 **.. PCB substrate manufacture (plastics, resins, etc.)**
1972

L03-H04E2 **.. Patterning, including photoresists, application & removal, etching etc.**
1972

L03-H04E3 **.. Metallising, plating, vapour deposition, forming metal sheet and laminating etc**
1972

L03-H04E4 **.. Thick film circuits**
Including conductive pastes and inks for thick film circuit manufacture.
1972

L03-H04E5 **.. Ceramic substrates for PCB's**
Includes glass and enamels substrates or coatings on metals or ceramics.
1972

L03-H04E6 **.. Soldering. Including tinning of circuits, soldering components to circuits, soldering apparatus etc. Brazing**
1986

L03-H04E6A **... Adhesives/adhesive joining for PCBs**
2007

L03-H04E7 **.. Microwelding**
1986

L03-H04E8 **.. Encapsulation of PCB's**
Including plastics and glass encapsulation.
1986

L03-H04E9 **.. Other treatment of PCB's**
1986

L03-H05 **Vehicles**
Including sparking and resistive ignition plugs.

L03-H **Applications Unclassified**

L03-J **OTHER MANUFACTURE AND TREATMENT OF ELECTR(ON)IC COMPONENTS AND MATERIALS**

L03-J **General and unclassified**
1986

L03-J01 **Recycling of electrical and electronic materials and devices**
Used in combination with relevant device codes.
2005

L03-J02 **Materials for device housings and packaging**
Includes polymers e.g. for electrical device casings and for non-specific electrical uses and material used for packaging devices and apparatus for storage.
2005

L03-J03 **Flame retardant materials**
2011

L03-J **Other manufacture and treatment of electr(on)ic components and materials**
Includes cleaning method and cleaning device.
1986

L03-X **TESTING OF DEVICES**
Exclude testing of batteries and fuel cells (see L03-E07) and testing of semiconductor devices (see L04-C18B).

L03-X **General and unclassified**
2011

L04 SEMICONDUCTORS

For ceramic semiconductors see the appropriate ceramic composition and L03-A02 or L03-B01. See also L03-D+: codes prior to 198601.

L04 **Semiconductors general**
1986

L04-A **MATERIALS - GENERAL**
Including preparation of precursor materials.

L04-A **General**
Materials codes will be used to identify material used in semiconductor processing and devices, where given (except for silicon which is the normal semiconductor material). These codes will also be used for preparation of the semiconductor material from impure precursors, (including silicon).
1986

L04-A01 **Silicon**
From 2002 silicon is coded in L04-A01A. From 2002 L04-A01 has been re-defined as the general code for group IV semiconductors. More specific named examples of group IV semiconductors are coded from L04-A01A to L04-A01F.
1986-2001

L04-A01 **Group IV semiconductors**
Prior to 2002 L04-A01 was assigned for silicon.
2002

L04-A01A **. Silicon**
2002

L04-A01B **. Silicon carbide**
2002

L04-A01C **. Silicon-germanium**
2002

L04-A01D **. Diamond**
2002

L04-A01E **. Germanium**
2002

L04-A01F **. Other group IV semiconductors**
2002

L04-A02 **AIII-BV compounds- general**
1986

L04-A02A **. Gallium arsenide**
From 2002 gallium arsenide is coded in L04-A02A3A. From 2002 L04-A02A has been re-defined to cover binary AIII-BV compounds-general.
1986-2001

L04-A02A **. Binary AIII-BV compound semiconductors**
Prior to 2002 L04-A02A was assigned for gallium arsenide.
2002

L04-A02A1 **.. Nitrides**
2002

L04-A02A1A **... Gallium nitrides**
2002

L04-A02A1B **... Indium nitrides**
2002

L04-A02A1C **... Aluminium nitrides**
2002

L04-A02A2 **.. Phosphides**
2002

L04-A02A2A **... Gallium phosphides**
2002

L04-A02A2B **... Indium phosphides**
2002

L04-A02A2C **... Aluminium phosphides**
2002

L04-A02A3 **.. Arsenides**
2002

L04-A02A3A **... Gallium arsenides**
2002

L04-A02A3B **... Indium arsenides**
2002

L04-A02A3C **... Aluminium arsenides**
2002

L04-A02A4 **.. Antimonides**
2002

L04-A02A4A **... Gallium antimonides**
2002

L04-A02A4B **... Indium antimonides**
2002

L04-A02A4C **... Aluminium antimonides**
2002

L04-A02B **. Gallium phosphide**
From 2002 gallium phosphide is coded in L04-A02A2A. From 2002 L04-A02B has been re-defined to cover tertiary AIII-BV compound semiconductors.
1986-2001

L04-A02B **. Tertiary AIII-BV compound semiconductors**
Prior to 2002 L04-A02B was assigned for gallium phosphide.
2002

L04-A02B1 **.. Nitrides**
2002

L04-A02B2 **.. Phosphides**
2002

L04-A02B3 **.. Arsenides**
2002

L04-A02B4 **.. Antimonides**
2002

L04-A02C **. Indium antimonide, indium phosphide**
From 2002 indium antimonide and indium phosphide are coded in L04-A02A4B and L04-A02A2B respectively. From 2002 L04-A02C has been re-defined to cover quaternary AIII-BV compound semiconductors.
1986-2001

L04-A02C **. Quaternary AIII-BV compound semiconductors**
Prior to 2002 L04-A02C was assigned for indium antimonide or indium phosphide.
2002

L04-A02C1 **.. Nitrides**
2002

L04-A02C2 **.. Phosphides**
2002

L04-A02C3 **.. Arsenides**
2002

L04-A02C4 **.. Antimonides**
2002

L04-A02D **. Complex ternary and quaternary AIII-BV compounds**
From 2002 complex ternary and quaternary AIII-BV compounds are coded in L04-A02B and L04-A02C respectively. From 2002 L04-A02D has been re-defined to cover other AIII-BV compound semiconductors.
1986-2001

L04-A02D **. Other AIII-BV compound semiconductors**
Prior to 2002 L04-A02D was assigned for complex ternary and quaternary AIII-BV compounds.
2002

L04-A03 **AII-BVI cpds.- general**
1986

L04-A03A **. Mercury sulfide, cadmium sulfide, zinc sulfide**
1986

L04-A03B **. Mercury selenide, cadmium selenide, zinc selenide**
1986

L04-A03C **. Mercury telluride, cadmium telluride, zinc telluride**
2002

L04-A03D **. Zinc oxide**
2010

L04-A04 **Organic semiconductor materials**
1986

L04-A04A **. Dianhydride semiconductor materials**
2002

L04-A04B **. Cyanine semiconductor materials**
2002

L04-A04C **. Thiophene semiconductors**
2002

L04-A04D **. Other organic semiconductor materials**
2002

L04-A05 **Semiconductor nanomaterials**
Includes semiconductor quantum dots.
2010

L04-A06 **Chalcopyrites**
2011

L04-A07 **Copper indium sulphide**
2011

L04-A08 **Semiconductor precursor material compositions/preparation**
2012

L04-A99 **Other inorganic semiconductor materials**
2011

L04-B **MANUFACTURE OF SEMICONDUCTOR MONOCRYSTALS - GENERAL**

L04-B **General**
1986

L04-B01 **Single crystal growth by Czochralski, Bridgman and other methods**
1986

L04-B01A **. Methods**
2002

L04-B01B **. Seed crystals**
2002

L04-B01C **. Apparatus**
2002

L04-B02 **General purification**
1986

L04-B02A **. Zone refining**
2002

L04-B02B **. Gettering**
2002

L04-B03 **Doping**
1986

L04-B04 **Wafer production**
1986

L04-B04A **. Chemical-mechanical polishing**
Includes polishing pad or polishing apparatus.
2002

L04-B04B **. Slicing and dicing**
2002

L04-C **SEMICONDUCTOR PROCESSING - GENERAL**

L04-C **General**
1986

L04-C01 **Epitaxial growth of semiconductor layers**
1986

L04-C01A **. Vapour deposition**
1986

L04-C01B **. Chemical vapour deposition**
Including plasma CVD.
1986

L04-C01C **. Liquid epitaxial growth**
1986

L04-C01D **. Sputtering of semiconductor layers**
2002

L04-C02 **Doped layers and regions**
1986

L04-C02A **. Forming layers with simultaneous doping**
1986

L04-C02B **. Doping by ion injection**
1986

L04-C02C **. Doping by gaseous, liquid or solid contact**
1986

L04-C02D **. Doping by diffusion**
1986

L04-C02E **. Dopant materials**
2012

L04-C03 **Amorphous layers**
1986

L04-C04 **Polycrystalline layers**
1986

L04-C05 **Masking and resist materials**
1986

L04-C05A **. Antireflective coating compositions**
2011

L04-C06 **Patterning techniques general**
Including sequences of masking and etching steps.
1986

L04-C06A **. Mask design and manufacture**
1986

L04-C06A1 **.. Pellicle design/manufacturing**
2013

L04-C06B **. Resists**
1986

L04-C06B1 **.. Patterning of resists**
2002

L04-C06B2 **.. Stripping of resists**
Includes stripping compositions.
2002

L04-C06C **. Hole manufacture**
1986

L04-C06D **. Aligning masks and layers**
1986

L04-C07 **Etching processes general**
Includes etch stop layers.
1986

L04-C07A **. Ion beam etching**
1986

L04-C07B **. Vapour phase etching, dry etching**
1986

L04-C07C **. Liquid phase etching, etchants**
1986

L04-C07C1 **.. Chemical liquid phase etching**
2002

L04-C07C2 **.. Electrochemical liquid phase etching**
2002

L04-C07D **. Plasma etching**
1986

L04-C07E **. Groove formation, dicing**
1986

L04-C07F **. Mechanical etching**
2002

L04-C07G **. Photoetching**
2011

L04-C08 **Combinations of L04-C01 - L04-C07**
1986

L04-C09 **Washing, rinsing and drying processes**
To include cleaning.
1986

L04-C09A **. Washing and cleaning compositions**
2005

L04-C09B **. Methods**
2005

L04-C09C **. Apparatus**
2005

L04-C10 **Conductive layers - general**
Including films.
1986

L04-C10A **. Conductive tracks, circuits**
Includes words and bit lines.
1986

L04-C10A1 **.. Electrical fuses**
Used in CMOS compatible processes. For chip ID, serial number, feature selection, memory redundancy, On-Time-Programmable (OTP).
2007

L04-C10B **. Polycrystalline silicon layers**
1986

L04-C10C **. Aluminium alloys**
1986

L04-C10D **. Copper alloys**
1986

L04-C10E **. Precious metals (alloys)**
1986

L04-C10F **. Other compositions**
1986

L04-C10G **. Buried layers**
1986

L04-C10H **. Layer conversion especially to semiconductor or insulator**
1986

L04-C10J **. Tungsten**
2002

L04-C10K **. Titanium**
2002

L04-C10L **. Coating methods**
2011

L04-C10L1 **.. PVD, CVD and Sputtering methods**
2011

L04-C10L2 **.. Other coating methods**
Includes electroplating, electroless plating, spraying and sol-gel techniques.
2011

L04-C11 **Contacts, terminals, electrodes - general**
1986

L04-C11A **. Ohmic contacts/electrodes**
1986

L04-C11B **. Schottky contacts/electrodes**
1986

L04-C11C **. Electrodes**
1986

L04-C11C1 **.. Gate electrodes**
For gate insulating layers see L04-C12J.
2002

L04-C11C2 **.. Capacitor electrodes**
2002

L04-C11C3 **.. Source/drain**
2002

L04-C11D **. Terminals**
Include terminal posts.
1986

L04-C12 **Insulating and passivating layers - general**
1986

L04-C12A **. Oxide layers**
1986

L04-C12B **. Nitride layers**
1986

L04-C12C **. Isolating mesas, islands etc.**
1986

L04-C12C1 **.. Semiconductor on insulator (SOI)**
2006

L04-C12C2 **.. Trench isolation (e.g. STI)**
2006

L04-C12C3 **.. LOCOS**
2006

L04-C12D **. Glass layers**
1986

L04-C12E **. Plastics layers**
1986

L04-C12F **. Layer conversion, especially to semiconductor or conductor**
1986

L04-C12G **. Resistors**
2006

L04-C12H **. Coating methods**
2011

L04-C12H1 **.. PVD, CVD and Sputtering methods**
2011

L04-C12H2 **.. Other coating methods**
Includes electroplating, electroless plating, spraying and sol-gel techniques.
2011

L04-C12I **. Buried layers**
2012

L04-C12J **. Gate insulating layers**
2012

L04-C12K **. Other inorganic insulating layers**
Includes formation of carbide type insulating layers.
2013

L04-C13 **Multilayer systems**
i.e. multiple conductive layers with intermediate insulating layers.
1986

L04-C13A **. Forming through holes**
1986

L04-C13B **. Forming through hole connections**
1986

L04-C14 **Combinations of insulating and conductive film or layer formation**
1986

L04-C14A **. Capacitive elements**
i.e. for ROMs etc.
1994

L04-C15 **Many stage process sequences**
1986

L04-C16 **Heat treatment of semiconductors**
1986

L04-C16A **. Annealing**
2002

L04-C16B **. Laser annealing**
2005

L04-C17 **Bonding processes**
1986

L04-C17A **. Soldering techniques**
Including desoldering
1986

L04-C17B **. Thermocompression bonding**
1986

L04-C17C **. Welding - microwelding**
1986

L04-C17D **. General adhesive use**
1986

L04-C17D1 **.. Permanent bonding**
2002

L04-C17D2 **.. Temporary bonding (TAB)**
2002

L04-C18 **Testing of semiconductors and devices. Process monitoring and control**
1986

L04-C18A **. Process monitoring and control**
See also relevant L04-C and U11-C process codes and U11-F codes.
2005

L04-C18B **. Testing methods/apparatus**
Includes measuring during processing and defect repair. See also U11-F codes.
2005

L04-C19 **Marking of defective and other devices**
1986

L04-C20 **Encapsulation of semi-conductor device - general**
1986

L04-C20A **. Using resin**
1986

L04-C20B **. Using glass or other compsn.**
1986

L04-C20C **. Appts. for encapsulation - moulds, handling equipment**
1986

L04-C20D **. Encapsulating IC's chips with lead frames, assemblies**
1986

L04-C21 **Sealing devices into housings - using prefabricated resin or ceramic parts**
1986

L04-C22 **Substrate manufacture**
Include novel substrate and treatment of such substrates.
1986

L04-C23 **Lead frame manufacture**
Include novel lead frames, lead frame manufacture and treatment. For attaching lead frames to devices see L04-C24.
1986

L04-C24 **Attaching devices to lead frames**
1986

L04-C24A **. Attaching devices using TAB**
1994

L04-C25 **Heat sinks**
1986

L04-C26 **Semiconductor processing - Other treatment processes not specified above**
Includes spacers, electron transport layer and electron transmission layer.

L04-C27 **Planarising**
2002

L04-C28 **Phase change materials and layers**
2011

L04-C29 **Ashing**
2012

L04-C30 **Purification/gettering**
For single crystal/ingot purification and gettering see L04-B02 codes.
2012

L04-D **APPARATUS FOR SEMICONDUCTOR PROCESSING**

L04-D **General**
1986

L04-D01 **Vapour deposition apparatus**
1986

L04-D02 **Cathode sputtering apparatus**
1986

L04-D03 **Liquid phase deposition apparatus**
1986

L04-D04 **Ion or plasma bombardment apparatus**
1986

L04-D04A **. Plasma etching apparatus**
2007

L04-D04B **. Plasma bombardment apparatus for layer deposition**
2007

L04-D05 **Furnaces for heat treatment**
1986

L04-D06 **Diffusion apparatus**
1986

L04-D07 **Soldering apparatus**
1986

L04-D08 **Resist coating apparatus**
1986

L04-D09 **Furnace furniture**
i.e. boats, crucibles, wafer supports.
1986

L04-D10 **Ancillary equipment**
1986

L04-D11 **Other apparatus**
Includes cleaning and testing of manufacturing apparatus. Can be used with other L04-D codes as appropriate.
2010

L04-E **SEMICONDUCTOR DEVICES**

L04-E01 **Transistors - general**
1986

L04-E01A **. Field effect transistors (FET)**
Includes High electron mobility transistor (HEMT) and Fin transistor.
1986

L04-E01A1 **.. Junction field effect transistors (JFET)**
1986

L04-E01B **. Metal oxide semiconductor transistors (MOST)**
1986

L04-E01B1 **.. Metal oxide semiconductor field effect transistors (MOSFET)**
1986

L04-E01C **. Metal insulator semiconductor transistors (MIST, MISFET)**
1986

L04-E01D **. Bipolar transistors**
Includes N-P-N and P-N-P.
2002

L04-E01E **. Thin film transistors (TFT)**
Includes TFT switching elements for active matrix LCD devices.
2002

L04-E01F **. CHEMFET**
2005

L04-E01G **. Phototransistors**
2005

L04-E01H **. Lab-on-chip**
see also J04-B02, S03-H01 and U13-D04B codes.
2005

L04-E02 **Diodes, rectifiers**
1986

L04-E02A **. Photodiodes**
2005

L04-E03 **Light emitting devices**
LED except where diode is specifically mentioned.
1986

L04-E03A **. Light-emitting diodes**
Includes OLED.
1986

L04-E03B **. Semiconductor lasers**
1986

L04-E04 **Thyristors**
1986

L04-E05 **Light receiving and detecting devices**
1986

L04-E05A **. Image sensors**
1986

L04-E05B **. Photoconductors**
1986

L04-E05C **. Infrared detectors**
1986

L04-E05D **. Photovoltaic devices, photoelectric cells**
See L03-E05 for solar cells.
1986

L04-E05E **. Electrophotography**
1986

L04-E05F **. Charge coupled devices (CCD)**
1986

L04-E05G **. Photoresistors**
2005

L04-E05H **. UV detectors**
2013

L04-E06 **Integrated injection logic (IIL or I2L) devices**
1986

L04-E07 **Hall effect devices**
1986

L04-E08 **Semiconductor switches**
1986

L04-E09 **Superconductive devices (Josephson junction elements)**
1986

L04-E10 **Electromechanical sensors**
1994

L04-E11 **Memristor**
2012

L04-E15 **Semiconductor memories**
2005

L04-E **General and unclassified**
1986

L04-F **ASSEMBLIES OF SEMICONDUCTOR DEVICES TOGETHER AND/OR WITH OTHER DEVICES**

L04-F **General**
1986

L04-F01 **Assembling devices on a substrate**
1986

L04-F02 **Soldering devices together, on a substrate, or in a circuit**
1986

L04-F03 **Integrated circuit systems**
1986

L04-F04 **Integrated optical systems**
1986

L04-F05 **Sealing circuits into packages or housings**
Including single in-line and dual in-line systems.
1986

L04-F06 **Hybrid circuits**
1986

L04-X **ANCILIARY SEMICONDUCTOR MANUFACTURING PROCESS AND APPARATUS**

L04-X **Unclassified**
1986

L04-X01 **Ultrapure water production for semiconductor processes**
see also J01 codes for specific treatment methods and apparatus.
2005

L04-X02 **Processing of waste water from semiconductor manufacturing processes**
see also J01 codes for specific treatment methods and apparatus.
2005

L04-X03 **Processing of waste gases from semiconductor manufacturing processes**
see also J01 codes for specific treatment methods and apparatus.
2005

L04-X04 **Clean room apparatus and processes**
see also J01 codes for specific treatment methods and apparatus.
2006

L04-X05 **Semiconductor apparatus cleaning methods and compositions**
2011

L04-X06 **Recycling and repairing semiconductor devices**
Includes recycling of semiconductor wafer, materials and components. Also includes recycling of waste produced during semiconductor processing. For processing waste water, see L04-X02. For processing waste gases, see L04-X03.
2011

M: METALLURGY

M11 Electroplating, Electrolytic Treatment of or with Metals
M12 Chemical Cleaning, including Degreasing
M13 Non-electrolytic Coating
M14 Other Chemical Metal Surface, Surface Treatment
M21 Mechanical Working of Metal – without Metal Removal
M22 Casting, Powder Metallurgy
M23 Soldering, Welding
M24 Metallurgy of Iron and Steel
M25 Non-Ferrous Metal Production/Refining
M26 Non-Ferrous Alloys
M27 Ferrous Alloys
M28 Electrolytic/Electrothermic Production/Refining Metals
M29 Changing Physical structure Non-Ferrous Metal Alloys

M: METALLURGY

Furnaces are coded as to their use, e.g. melting furnaces for metal casting M22-G03G; heat treatment furnaces M24-D04, M29-C02; sintering furnaces M22-H03B or M24-A01, M25-A02; electric furnaces, if of a general type, M28-E.

In sub-sections M26 and M27, there is additionally provided a terminal code letter to indicate the important alloying material.

Non-electrolytic coatings are coded according to their method of production, and if not specified coded under a general code.

The code commenced at CPI 197001.

M11 ELECTROPLATING, ELECTROLYTIC TREATMENT OF OR WITH METALS

M11 has priority over M12 to 14: Thus M11-F covers boriding, chromating, etc. where these processes are electro-chemical in nature.

M11-A	**ELECTROLYTIC DEPOSITION OF METALS, ALLOYS**
M11-A	**General**
M11-A01	**Chromium**
M11-A02	**Nickel or cobalt**
M11-A03	**Copper**
M11-A04	**Zinc**
M11-A05	**Noble metals (Ru, Rh, Pd, Ag, Os, Ir, Pt, Au)**
M11-A06	**Iron**
M11-A06A	**. Iron** **1972-2011**
M11-A07	**Tin** **2002**
M11-A09	**Other specified metals** **2002**
M11-B	**SPECIAL PROCESSES, CHEMICAL ADDITIVES**
M11-B	**General**
M11-B01	**Brighteners and levelling agents**
M11-B02	**Multilayer deposition**
M11-B03	**After-treatment, thermal**
M11-B04	**Electroplating tubes, wire, etc.**
M11-B05	**Plating of difficult surfaces** E.g. non-conductors.
M11-B05A	**. For electrical components** E.g. printed circuits. **2006**
M11-B06	**Disposal/recovery used electrolytes/rinses** Includes apparatus.
M11-B07	**Control systems and servicing**
M11-B08	**Laboratory methods**
M11-B09	**Pretreatment of metallic substrates** **1972**
M11-B10	**Electrolytic compositions** **2002**
M11-B11	**Electrolytic coating containing embedded materials** Includes particulates, whiskers, composite materials. **2010**
M11-C	**APPARATUS FOR ELECTROPLATING**
M11-C	**General**
M11-C01	**Electrical aspects** Includes electrodes, power supplies, etc. **2002**
M11-C02	**Mechanical aspects** Includes baths, lifting mechanisms. **2002**
M11-D	**ELECTROFORMING**
M11-D	**General**
M11-E	**ANODISING OF METALS**
M11-E01	**Decorative, anticorrosive purposes**
M11-E02	**Electrical purposes** E.g. capacitor foil.
M11-E	**General**
M11-F	**ELECTROCHEMICAL FORMING NON-METALLIC LAYERS ON METALS**
M11-F	**General** Includes boriding, chromating, etc.
M11-G	**COATING METALS BY ELECTROPHORESIS**
M11-G	**General**
M11-G01	**Application of paint**

M11-H	**ELECTROLYTIC CLEANING, ETCHING AND POLISHING**
M11-H	**General** **1986**
M11-H01	**Electrolytic cleaning**
M11-H02	**Electrolytic polishing** Includes electrolytic etching.
M11-H03	**Electrochemical machinery, localised metal removal** Scope now covered in M23-D06. **1986-2002**
M11-H04	**Electrolytic etching** Scope now covered in M11-H02. **1986-2002**
M11-H05	**Apparatus** **1986**
M11-J	**CONTROL/TESTING** **1972**
M11-J	**General**
M11-J01	**Composition control** **2002**
M11-J02	**Control systems** **2002**
M11-J03	**Testing** **2002**

M12 CHEMICAL CLEANING, INCLUDING DEGREASING

M12-A	**CLEANING, PICKLING METAL**
M12-A	**General**
M12-A01	**Cleaning solutions/salt mixtures**
M12-A02	**Inhibitors for cleaning solutions/salts**
M12-A03	**Disposal/regeneration of used solution/salt mixtures**
M12-A04	**Apparatus**
M12-A05	**Processes** **1986**
M12-B	**OTHER CLEANING METHODS**
M12-B01	**Degreasing** Includes apparatus.
M12-B	**Unclassified** Includes apparatus.

M13 NON-ELECTROLYTIC COATING

M13-A **COATING FROM A LIQUID METAL BATH**

M13-A **General**

M13-A01 **Hot dipping**
2002

M13-A02 **Galvanising**
2002

M13-B **COATING FROM SOLUTION OR SUSPENSION OF METAL COMPOUNDS**

M13-B **Other coating from solution or suspension of metal compounds**
Includes electroless plating.

M13-C **METAL SPRAYING**

M13-C **General**

M13-C01 **Methods**
Including plasma spraying.
2002

M13-C02 **Apparatus**
Including torches, nozzles, etc.
2002

M13-D **CEMENTATION BY DIFFUSION PROCESS**

M13-D **General**
1972

M13-D01 **Using solids**

M13-D01A **. Carburising/nitriding**
1986

M13-D01B **. Others**
Including carbonitriding, boronising, chromising, aluminising.
1986

M13-D02 **Using liquids**

M13-D02A **. Carburising/nitriding**
1986

M13-D02B **. Other cementation by diffusion process using liquids**
1986

M13-D03 **Using gases**

M13-D03A **. Carburising/nitriding**
1986

M13-D03B **. Other cementation by diffusion process using gases**
Including oxidising, chromising.
1986

M13-D04 **Post-treatment of coatings**
1986

M13-E **GAS PLATING BY DECOMPOSITION OR REDUCTION**

M13-E **General**

M13-E01 **To form metallic coatings**

M13-E02 **To form inorganic coatings**

M13-E03 **To form organic coatings**

M13-E04 **Pretreatment of substrates**
1986

M13-E05 **Process characterised by glow or arc discharge**
1986

M13-E06 **Process characterised by thermal decomposition or reduction of gases on heated surfaces**
1986

M13-E07 **Apparatus**
1986

M13-E08 **Post treatment of coatings**
1986

M13-F **FORMING COATINGS BY CONDENSATION FROM A VAPOUR**

M13-F **General**

M13-F01 **Pretreatment of substrates**
1986

M13-F02 **Coating on metallic substrates**
1986

M13-F03 **Coating on other substrates**
Including Si substrates.
1986

M13-F03A **. Coating on semiconductors**
2002

M13-F03B **. Coating on glass and ceramics**
2002

M13-F03C **. Coating on organic substrates**
Including polymers.
2002

M13-F04 **Post treatment of coatings**
1986

M13-F05 **Apparatus**
Includes substrate holders.
2002

M13-G **CATHODIC SPUTTERING**

M13-G **General**

M13-G01 **Cathodic sputtering pre-treatment**
1986

M13-G02 **Cathodic sputtering apparatus**
Including target materials.
1986

M13-G02A . **Targets**
Including materials and manufacture.
2002

M13-G02B . **Magnetrons (in sputtering apparatus)**
See also V05-C codes.
2007

M13-G03 **Sputtering on metallic surfaces**
2002

M13-G04 **Sputtering on non-metallic surfaces**
2002

M13-G05 **Post treatment of coatings**
2013

M13-H **OTHER COATING METHODS**

M13-H01 **Cladding**
Including weld deposition.
1972

M13-H02 **Sintering on**
1972

M13-H03 **Using adhesives**
1972

M13-H04 **Ceramic coatings, general**
1972

M13-H04A . **Powder coatings**
2006

M13-H05 **Plastics coating, general**
1972

M13-H05A . **Powder coatings**
2006

M13-H06 **Electrostatic coating, general**
1972

M13-H **General and unclassified**

M13-J **ENAMELLING AND VITREOUS COATING**

M13-J01 **Pre-treatment of surface**

M13-J02 **Enamelling/coating**

M13-J03 **After treatment**
Including de-enamelling.

M13-J **General and unclassified**
1972

M13-K **OIL-FREE LUBRICANT AND FRICTION COATINGS**

M13-K **General**

M13-K01 **Lubricant coatings**
Including Teflon® coatings.
2002

M13-K02 **Friction**
Including coatings for bearings.
2002

M13-L **CONTROL/TESTING**

M13-L **General**
1972

M13-M **PROTECTIVE LAYERS**

M13-M **General**
2002

M13-M01 **Thermal barrier coating**
2002

M13-M02 **Wear resistant**
Includes abrasion resistant coating.
2006

M13-M03 **Oxidation resistant**
2012

M14 OTHER CHEMICAL METAL SURFACE TREATMENT

M14-A ETCHING

M14-A General

M14-A01 Mechanical processes
1986

M14-A02 Chemical processes
1986

M14-A03 Etching media
Including aqueous and gaseous compositions.
1986

M14-A04 Laser or ion beam processes
1994

M14-B BRIGHTENING

M14-B General

M14-C COLOURED LAYERS

M14-C General
For anodising of metals see M11-E01 instead.

M14-D NON-METALLIC LAYERS BY SURFACE REACTION

M14-D General

M14-D01 Oxide layers

M14-D02 Phosphate layers

M14-D03 Chromate layers
1972

M14-E ANODIC PROTECTION

M14-E General

M14-F CORROSION INHIBITORS

M14-F General

M14-F01 Organic

M14-F02 Inorganic

M14-G CATHODIC PROTECTION

M14-G General

M14-G01 Impressed EMF
2002

M14-G02 Passive systems
includes sacrificial anodes.
2002

M14-H MULTISTAGE CHEMICAL/PHYSICAL PROCESSES

M14-H General

M14-J CORROSION TESTING, CONTROL, ETC.

M14-J General
1972

M14-K CORROSION PROTECTION

M14-K General
Includes plastic wrapping.
1972

M21 MECHANICAL WORKING OF METAL - WITHOUT METAL REMOVAL

M21-A **ROLLING METAL STOCK**

M21-A **General**

M21-A01 **Rolling mills and methods, general and unclassified**

M21-A01A **. Hot rolling**
2002

M21-A01B **. Cold rolling**
2002

M21-A02 **Rolling mill stands, components**
Including gears, bearings, etc.

M21-A02A **. Rolls**
Including production of composite rolls, treatments such as grinding, polishing, heat, blooming.
1986

M21-A02A1 **.. Cleaning rolls**
Includes servicing.
2011

M21-A03 **Tube and pipe mills**

M21-A03A **. Strip, bar and wire (rod) mills**
1986

M21-A03B **. Sheet, band and plate mills**
1986

M21-A04 **Feeding devices for mills**

M21-A05 **Coilers, take-offs and cooling beds**

M21-A05A **. Descaling**
2002

M21-A06 **Rolling lubricants**

M21-A07 **Control mechanisms and processes**
Including speed, tension, width, thickness, etc.
1986

M21-B **PRODUCTION OF METAL SHEET, WIRE ROD, TUBE OR PROFILE OTHER THAN BY ROLLING**

M21-B **General**

M21-B01 **Metal drawing**

M21-B01A **. Processes**
1986

M21-B01B **. Equipment**
Including dies, holders, mandrels, tools, etc.
1986

M21-B02 **Metal extrusion**

M21-B02A **. Processes**
1986

M21-B02B **. Auxiliary processes**
Including feeding and take off, heating of tools and containers, etc.
1986

M21-B02C **. Equipment**
1986

M21-B02D **. Control devices, regulating devices etc.**
1986

M21-B03 **Metal working lubricants**

M21-B04 **Tube bending, expanding etc.**
1972

M21-C **PRODUCTION OF SEAMED, FINNED OR RIBBED TUBE**

M21-C **General**

M21-D **HIGH ENERGY RATE FORMING**

M21-D **General**
Includes explosive forming.

M21-E **WORKING SHEET METAL**

M21-E **General**

M21-E01 **Bending, corrugating, flanging, straightening**

M21-E02 **Punching, stamping and pressing**

M21-E03 **Deep drawing, spinning, stretch forming**

M21-E04 **Making sheet metal structures**
1972

M21-F **WORKING WIRE**

M21-F **General**

M21-G **PRODUCTION OF PINS, NEEDLES, NAILS, FASTENERS**

M21-G **General**

M21-H **MAKING SPECIFIC ROLLED PRODUCTS**

M21-H **General**

M21-H01 **Making sheet metal structures**
Of specified cross-section e.g. H-beam, I-beam.
2002

M21-J **FORGING, HAMMERING, PRESSING, RIVETING**

M21-J **General**

M21-J01 **Processes**
1986

M21-J02	**Equipment** Including hammers, forging presses. **1986**
M21-J03	**Control devices** **1986**
M21-K	**MAKING SPECIFIC FORGED OR PRESSED PRODUCTS**
M21-K	**General**
M21-L	**CHAIN MAKING**
M21-L	**General**
M21-M	**CONTROL, TESTING**
M21-M	**General** See M21-A01 for specific rolling method.
M21-N	**ANCILLARY EQUIPMENT**
M21-N01	**Feed and take-off equipment** **1972**
M21-N02	**Manipulators** **1972**
M21-N03	**Safety devices** **1972**
M21-N04	**Furnaces, cooling beds** **1972**
M21-N05	**Cutting** Including methods. **2002**
M21-N	**General and unclassified** **1972**

M22 CASTING, POWDER METALLURGY

M22-A	**FOUNDRY MOULDING**
M22-A	**General**
M22-A01	**Mould or core composition**
M22-A02	**Inorganic binders**
M22-A03	**Organic binders**
M22-A04	**Surface coating mould release compositions**
M22-B	**MOULD MATERIAL HANDLING/DRESSING**
M22-B	**General**
M22-B01	**Mixing, grinding, kneading**
M22-B02	**Sieving, separating, reclaiming**
M22-B03	**Cooling or drying**
M22-C	**PATTERNS**
M22-C	**General**
M22-C01	**Lost patterns**
M22-C02	**Plates and core boxes**
M22-D	**MOULD/CORE DESIGN/PRODUCTION**
M22-D	**General**
M22-E	**MACHINES FOR MOULD/CORE MAKING**
M22-E	**General** Used in place of M22-F.
M22-F	**MOULDING MACHINES**
M22-F	**General** See also M22-E.
M22-G	**METAL CASTING**
M22-G	**General**
M22-G01	**Casting pigs for remelting, etc.**
M22-G02	**Casting ingots for subsequent rolling, forging**
M22-G02A	**. Ingot casting methods**
M22-G02B	**. Ingot moulds, hot tops and linings**
M22-G03	**Casting machines and processes**
M22-G03A	**. Continuous and line casting**
M22-G03A1	**.. Moulds** **1977**

M22-G03A1A ... **Roll**
2002

M22-G03A1B ... **Endless belt**
2002

M22-G03A2 .. **Withdrawal equipment**
1977

M22-G03A3 .. **Cooling**
1977

M22-G03A4 .. **Tundish**
2002

M22-G03B . **Centrifugal**

M22-G03C . **Chill**

M22-G03C1 .. **Using moulds or cores with high thermal conductivity**
1986

M22-G03D . **Die casting machines and processes**

M22-G03D1 .. **Methods**
2002

M22-G03D2 .. **Apparatus**
2002

M22-G03E . **Vacuum casting machines and processes**

M22-G03F . **Other casting methods**

M22-G03G . **Ladles, casting furnaces and equipment**

M22-G03G1 .. **Nozzles, stoppers**
1977

M22-G03G2 .. **Linings**
Includes repair.
1977

M22-G03G2A ... **Sacrificial**
2002

M22-G03G2B ... **Permanent**
2002

M22-G03G3 .. **Dies, moulds etc. (other than for foundry casting)**
1986

M22-G03G4 .. **Treatment of metal in the mould while it is molten or ductile (by shaking, vibrating, using magnetic or electric fields etc.)**
1986

M22-G03G5 .. **Mould furniture**
Includes dams, weirs, etc.
2002

M22-G03G6 .. **Filters**
2002

M22-G03G7 .. **Mold cleaning apparatus and process**
2011

M22-G03G8 .. **Apparatus for handling molds**
2011

M22-G03H . **Fettling and post-treatment of castings**
See M24-D02 and M29-C for thermal treatment.

M22-G03J . **Control/testing of casting**
1977

M22-G03K . **Making specific cast products**
1977

M22-G03K1 .. **Turbine components**
2002

M22-G03K1A ... **Aerospace**
2002

M22-G03K1B ... **Power generation**
2002

M22-G03K2 .. **Internal combustion engine components**
Includes blocks, cylinder heads and bores.
2002

M22-G03L . **Directional solidification**
2002

M22-G03L1 .. **Single crystals**
2002

M22-G03M . **Rapid solidification processes (RSPs)**
2002

M22-G03M1 .. **Metallic glasses**
2002

M22-G03N . **Investment casting**
2002

M22-H **POWDER METALLURGY**

M22-H **General**

M22-H01 **Metal/alloy powders, granulates, fibres production**
Includes production of suspensions when details of the metal powder production are given.

M22-H02 **Powder treatment prior to use**

M22-H03 **Sintered articles, coating manufacture**

M22-H03A . **Compacting**

M22-H03B . **Sintering**

M22-H03C . **Compacting and sintering**

M22-H03D . **Fibre reinforcement**

M22-H03E . **Post treatment/impregnation**

M22-H03F . **Composite layers, materials**

M22-H03F1 .. **Metal matrix composites (MMCs)**
2002

M22-H03F2	**.. Ceramic matrix composites (CMCs)** 2002
M22-H03G	**. Powder metal products** 1972

M23 SOLDERING, WELDING

M23-A	**SOLDERING, BRAZING**
M23-A	**General**
M23-A01	**Metal compositions**
M23-A02	**Flux**
M23-A03	**Apparatus**
M23-A04	**Methods** 1986
M23-A06	**Testing, control operations and equipment** 2011
M23-B	**FLAME WELDING**
M23-B	**General**
M23-B01	**Torches, burners, gas supply**
M23-B02	**Machines and methods**
M23-C	**FLAME CUTTING AND SCARFING**
M23-C	**General**
M23-D	**ELECTRIC WELDING AND CUTTING**
M23-D	**General**
M23-D01	**Arc welding/cutting, plasma arc**
M23-D01A	**. Methods** 1972
M23-D01A1	**.. Seam welding** 1986
M23-D01A2	**.. Build up welding** 1986
M23-D01A3	**.. Submerged arc welding** 1986
M23-D01A4	**.. Specially adapted for particular articles** 1986
M23-D01A5	**.. Arc butt welding** 2011
M23-D01A6	**.. Stud welding** 2012
M23-D01B	**. Apparatus and circuits** 1972
M23-D01B1	**.. Torches, nozzles, holders** 1977
M23-D01B2	**.. Flux, gas, wire feed** 1977
M23-D01B3	**.. Circuits** 1986
M23-D01B4	**.. General apparatus** 1986

M23-D01C . **Arc welding types**
2002

M23-D01C1 .. **Tungsten inert gas (TIG)**
E.g. Gas tungsten-inert gas (GTAW), tungsten arc gas shield (TAGS).
2002

M23-D01C2 .. **Metal inert gas (MIG)**
E.g. Metal arc gas shield (MAGS).
2002

M23-D01C3 .. **Manual metallic arc (MMA)**
2002

M23-D01C4 .. **Plasma**
2002

M23-D02 **Resistance welding**

M23-D02A . **Methods**
1972

M23-D02A1 .. **Butt welding**
1986

M23-D02A2 .. **Seam welding**
1986

M23-D02A3 .. **Spot welding**
1986

M23-D02A4 .. **Other processes**
1986

M23-D02A5 .. **Specially adapted for particular work**
1986

M23-D02B . **Apparatus and circuits**
1972

M23-D02B1 .. **Circuits**
1986

M23-D02B2 .. **General apparatus**
1986

M23-D03 **Induction heating**

M23-D04 **Electron beam**

M23-D05 **Laser beam**

M23-D06 **Spark erosion**

M23-D07 **Electroslag welding**
1972

M23-E **OTHER WELDING AND CUTTING PROCESSES**

M23-E01 **Forge or friction welding**
1994

M23-E02 **Alumino-thermic and explosive welding**

M23-E03 **Hard facing, general**
1972

M23-E04 **Ultrasonic welding**
2011

M23-E **Unclassified and general**

M23-F **WELDING RODS, ELECTRODES AND FLUXES**

M23-F **General**

M23-G **INSPECTION AND CONTROL METHODS**

M23-G **General**

M23-H **ANCILLARY EQUIPMENT**

M23-H **General**
Includes equipment for cleaning welding devices

M23-J **SPECIAL WELDING FEATURES**
1972

M23-J **General**

M23-K **SPECIALLY PROFILED EDGE PORTIONS OF WORKPIECES FOR MAKING SOLDERING OR WELDING CONNECTIONS**
2012

M23-K **General**

M24 METALLURGY OF IRON AND STEEL

M24-A	**MANUFACTURE OF IRON AND STEEL**
M24-A01	**Treatment of iron ores and materials**
M24-A01A	**. Roasting, briquetting and sintering** **1986**
M24-A01B	**. Treatment of cokes** Including coke ovens **1986**
M24-A02	**Blast furnace pig manufacture**
M24-A02A	**. By applying additives (fluxing agents etc.)** **1986**
M24-A02B	**. Making slags of special composition** **1986**
M24-A02C	**. General** **1986**
M24-A03	**Sponge iron or liquid steel production**
M24-A04	**Metallothermic processes**
M24-A05	**Apparatus for iron/steel production**
M24-A05A	**. Linings** **1986**
M24-A05B	**. Cooling devices** **1986**
M24-A05C	**. Discharge devices** **1986**
M24-A05D	**. Tuyeres** **1986**
M24-A05E	**. Stoves for heating blast** **1986**
M24-A05E1	**.. Preheating, cooling or drying hot blast** **1986**
M24-A05F	**. Charging devices** **2012**
M24-A06	**Analysis, control and laboratory methods for refining**
M24-A07	**Scrap and slag treatment** **1972**
M24-A07A	**. Working up flue dust and scrap** **1986**
M24-A07B	**. Working up slag** **1986**
M24-A07C	**. Working up waste water, slurry and sludge** **2011**
M24-A	**Other processes**
M24-B	**PROCESSING IRON AND STEEL**
M24-B01	**Processing iron, (to produce)**
M24-B01A	**. Pig iron**
M24-B01B	**. Cast iron**
M24-B01C	**. Wrought iron**
M24-B02	**Processing steels, (by)**
M24-B02A	**. Crucible process**
M24-B02B	**. Hearth process**
M24-B02C	**. Converter process**
M24-B02D	**. Electro process**
M24-B02E	**. Specified but unclassified**
M24-C	**TREATMENT OF IRON AND STEEL MELTS**
M24-C01	**Dephosphorising; desulphurising**
M24-C02	**Killing**
M24-C03	**Balancing**
M24-C04	**Removing other impurities**
M24-C05	**Inoculation and spheroidising** Including nodulizing treatment of molten iron.
M24-C06	**Decarburising** **1986**
M24-C07	**Use of slags or fluxes as treating agents** **1986**
M24-C08	**Alloying of ferrous melts** **1986**
M24-C09	**Apparatus for treatment of melts** Including lances, nozzles, stirrers, etc. **1986**
M24-C10	**Degassing** **2012**
M24-C	**General**
M24-D	**CHANGING PHYSICAL PROPERTIES IRON STEEL**
M24-D	**General**
M24-D01	**Mechanical working**
M24-D01A	**. Hot working**
M24-D01A1	**.. Rolling** **2006**
M24-D01B	**. Cold working**

M24-D01B1 .. **Rolling**
2006

M24-D01C **Mechanical alloying**
2002

M24-D02 **Heat treatment, general**

M24-D02A . **Hardening treatments**
E.g. tempering, surface hardening.
1986

M24-D02B . **Annealing**
Including normalising, stress relieving, etc.
1986

M24-D02C . **Using heat treatment baths**
i.e. salt baths, oil baths, metal baths and fluidised beds.
1986

M24-D02D . **Multistage processes**
1986

M24-D03 **Heat treatment of specific articles**

M24-D04 **Heat treatment apparatus**

M24-D04A . **Furnaces for ingots**
e.g. soaking pits.
1986

M24-D04B . **Furnaces for treating strip, wire or sheet**
1986

M24-D04C . **Furnaces, coilers**
1986

M24-D04D . **Other furnaces**
1986

M24-D04E . **Quenching baths**
1986

M24-D04F . **Multistage processes**
1986

M24-D05 **Removal of non-metals by diffusion**

M24-D06 **Special physical methods**
E.g. peening.
1972

M24-D07 **Process control or regulation for heat treatment**
1986

M24-E **CONTROL/TESTING METHODS**

M24-E **General**

M24-F **IMPROVING SPECIFIED MECHANICAL PROPERTIES**

M24-F **General**
2002

M24-F01 **Creep resistance**
2002

M24-F02 **Fatigue resistance**
2002

M24-F03 **Tensile strength**
2002

M24-F04 **Fracture toughness (crack resistance)**
2002

M24-F05 **Stress corrosion cracking resistance**
2002

M24-F06 **Ductility**
2002

M24-F07 **Yield strength**
2013

M25 NON-FERROUS METAL PRODUCTION/REFINING

M25-A GENERAL ORE TREATMENT

M25-A01 Concentration

M25-A01A . By dry methods
1986

M25-A01B . By wet methods
Including flotation.
1986

M25-A02 Crushing, roasting, briquetting, sintering

M25-A Other processes

M25-B WET EXTRACTION OF METALS AND METAL COMPOUNDS

M25-B General

M25-B01 Precipitation as an insoluble compound
E.g. hydrolysis.
1986

M25-B02 Reduction with hydrogen or metal causing metal precipitation from solution
1986

M25-B02A . Using metal chlorides
E.g. for Ti production.
2002

M25-B03 Ion exchange
Including absorption on resin.
1986

M25-B04 Solvent extraction
i.e. complexing by organic reagents.
1986

M25-C DRY REDUCTION TO METAL

M25-C General

M25-C01 Apparatus
1972

M25-C02 Methods
1972

M25-D REDUCTION OF METAL CARBONYLS

M25-D General

M25-E WORKING UP SCRAP, FLUE DUST OR SLAG

M25-E General

M25-E01 Working up of waste water, waste slurry or sludge
1986

M25-E02 Working up scrap, flue dust or slag
2002

M25-F REFINING BY OTHER METHODS

M25-F General

M25-F01 Vacuum refining
2005

M25-F02 Bioremediation using microorganisms
2005

M25-F03 Phytoremediation and phytomining
2005

M25-F04 Low gravity and zero gravity processing
2005

M25-G OBTAINING SPECIFIC METALS

M25-G General

M25-G01 Aluminium

M25-G02 Antimony

M25-G03 Arsenic

M25-G04 Alkali metal

M25-G05 Alkaline earth metal

M25-G06 Beryllium

M25-G07 Bismuth

M25-G08 Copper

M25-G09 Cadmium

M25-G10 Chromium

M25-G11 Cobalt

M25-G12 Germanium

M25-G13 Indium

M25-G14 Lead

M25-G15 Mercury

M25-G16 Magnesium

M25-G17 Manganese

M25-G18 Molybdenum

M25-G19 Nickel

M25-G20 Noble metals
Excluding Ag - see M25-G22.

M25-G21 Rare earths

M25-G22 Silver

M25-G23 Tin

M25-G24 Titanium

M25-G25 Uranium

M25-G26	**Vanadium**
M25-G27	**Zinc**
M25-G28	**Other metals**
M25-H	**ANALYSIS, CONTROL AND LABORATORY METHODS**
M25-H	**General**
M25-J	**APPARATUS FOR NON-FERROUS METAL PRODUCTION** **1972**
M25-J	**General**
M25-X	**OTHER NON-FERROUS METAL PROCESSING**
M25-X	**General and unclassified** **1986**

M26 NON-FERROUS ALLOYS

The following terminal code letters may be used to indicate important alloying elements: A = Al, Sb, As; B = Ba, Bi, Be, B; C = C, Cu, Cd, Cr, Co, Ca; H = H, Hf; J = In, Fe; L = Li, Pb; M = Hg, Mg, Mn, Mo; N = N, Ni, noble metals, Nb; O = O; P = K, P; R = Rare earth metals; S = Si, Na, S; T = Ta, Sn, Th, Ti, W; U = U; V = V; Z = Zn, Zr; X = other specified elements.

M26-A	**ALLOY PRODUCTION AND TREATMENT**
M26-A01	**By melting**
M26-A02	**By pressing or sintering** Includes casting.
M26-A03	**Removing material from alloys to produce different alloys**
M26-A04	**Mechanical alloying** **2002**
M26-A	**By other methods**
M26-B	**ALLOYS BASED ON PARTICULAR METALS**
M26-B01	**Noble metal**
M26-B02	**Mercury** E.g. amalgams.
M26-B03	**Copper**
M26-B04	**Lead**
M26-B05	**Tin**
M26-B06	**Titanium or zirconium**
M26-B07	**Zinc or cadmium**
M26-B08	**Nickel or cobalt**
M26-B09	**Aluminium**
M26-B10	**Magnesium**
M26-B11	**Beryllium**
M26-B12	**Hard alloys based on carbides, nitrides, borides, silicides, etc.**
M26-B13	**Based on other high melting or refractory metals**
M26-B14	**Lithium** **2002**
M26-B15	**Gallium** **2002**
M26-B16	**Rare earth metals** **2002**
M26-B17	**Alkali(ne) metals** For magnesium and lithium alloys, see M26-B10 and M26-B14 respectively. **2011**

M26-B18	**Manganese**	**2011**
M26-B	**General and others**	
M26-C	**SPECIAL ALLOYS**	
M26-C01	**Amorphous alloys, glassy**	**2002**
M26-C02	**Nanophase alloys (nanocrystalline)**	**2002**
M26-C03	**Shape memory**	**2002**
M26-C04	**Single crystalline alloy**	**2013**

M27 FERROUS ALLOYS

Used in preference to codes in the M24 section when a specific iron alloy or steel is concerned. The following terminal code letters may be used to indicate important alloying elements: A = Al, Sb, As; B = Ba, Bi, Be, B; C = Cu, Cd, Cr, Co, Ca; J = In, Fe; L = Pb; M = Hg, Mg, Mn, Mo; N = Ni, noble metals, Nb; P = K, P; S = Si, Na, S; T = Ta, Sn, Ti, W; U = U; V = V; Z = Zn, Zr; X = other specified elements.

M27-A	**ALLOYS**	
M27-A01	**Production**	
M27-A02	**Master alloys**	
M27-A03	**Cast iron alloys** >2 wt. % C.	
M27-A04	**Steel alloys**	
M27-A	**Other alloys**	
M27-B	**TREATMENT**	
M27-B01	**Production**	**1970-2009**
M27-B02	**Master alloys**	
M27-B03	**Cast iron alloys**	
M27-B04	**Steel alloys**	
M27-B	**Other alloys**	
M27-C	**CARBON STEEL** For C contents above 2 wt.%, see M27-A3	
M27-C01	**Ultra-low C content (<0.03 wt. %)**	**2002**
M27-C02	**Low C content (0.03-0.3 wt.%)**	**2002**
M27-C03	**Medium C content (0.3-0.7 wt.%)**	**2002**
M27-C04	**High C content (0.7-1.7 wt.%)**	**2002**
M27-C05	**Very high C content (>1.7 wt.%)**	**2012**
M27-D	**SPECIAL ALLOYS**	
M27-D01	**Stainless steels**	**2002**
M27-D02	**Mechanically alloyed**	**2002**
M27-D03	**Nanophase alloys**	**2012**
M27-D04	**Amorphous alloys**	**2011**
M27-D05	**Shape memory alloys**	**2011**

M28 ELECTROLYTIC/ ELECTROTHERMIC PRODUCTION/ REFINING METALS

M28-A	**METALS, ALLOYS BY SOLUTION ELECTROLYSIS**
M28-A	**General** Including Hall-Heroult process for Al production.
M28-B	**METALS, ALLOYS BY FUSED ELECTROLYTE ELECTROLYSIS**
M28-B	**General**
M28-C	**ELECTROLYTIC CELL PRODUCTION**
M28-C	**General**
M28-C01	**Electrodes** **1986**
M28-C02	**Operating and servicing** **1986**
M28-C03	**Construction and assembly of cells** **1986**
M28-D	**METAL POWDER OR POROUS METAL BY ELECTROLYSIS**
M28-D	**General**
M28-E	**ELECTROTHERMIC TREATMENT ORES, METALS, ALLOYS**
M28-E	**General**
M28-F	**OTHER ELECTRICAL METAL REFINING PROCESSES**
M28-F	**General and unclassified**

M29 CHANGING PHYSICAL STRUCTURE NON-FERROUS METALS ALLOYS

M29-A	**MECHANICAL WORKING, HOT**
M29-A	**General**
M29-B	**MECHANICAL WORKING, COLD**
M29-B	**General**
M29-C	**HEAT TREATMENT**
M29-C	**General**
M29-C01	**Of specific articles** **1972**
M29-C02	**Apparatus** **1972**
M29-D	**SPECIAL PHYSICAL METHODS**
M29-D	**General**
M29-E	**OTHER NON-FERROUS METAL TREATMENT AND TESTING**
M29-E	**General and unclassified (including testing non-ferrous alloys)** **1994**
M29-F	**IMPROVING SPECIFIED MECHANICAL PROPERTIES**
M29-F	**General** **2002**
M29-F01	**Creep resistance** **2002**
M29-F02	**Fatigue resistance** **2002**
M29-F03	**Tensile strength** **2002**
M29-F04	**Fracture toughness (crack resistance)** **2002**
M29-F05	**Stress corrosion cracking resistance** **2002**
M29-F06	**Ductility** **2002**
M29-F07	**Yield strength** **2013**

N: CATALYSTS

N01 Alkali(ne) Earth Metal, B, Al, Si: Element, (Hydr)oxide, Inorganic Salt, Carboxylate

N02 Fe, Co, Ni, Cu, Noble Metal: Element, (Hydr)oxide, Inorganic Salt, Carboxylate

N03 Other Metal, As: Element, (Hydr)oxide, Inorganic Salt, Carboxylate

N04 C, N, O, P, S, Se, Te, Halogen: Element, Inorganic Compound

N05 Metal Hydride, Co-ordination Complex, Organic Compound excluding Carboxylate

N06 Molecular Sieve, Zeolite, Special Form, General

N07 Catalyst Applications and Uses

N: CATALYSTS

Any catalysts mentioned in an abstract in Section B, C, D, E, H, J, K, L, M are coded in Section N according to their chemical composition; while absorbents, non-catalytic reactants and unspecified 'acidic' or 'basic' catalysts are not coded though these latter may receive a general (N06) code. If catalysts (as chemical compounds) are claimed, they are also coded in Section E unless they are metallic elements or polymers.

Note

1. Catalysts or supports are coded in both sections E and N if they are novel, and from 199401 they also receive the code N06-F. Those supports which are not novel but form a significant part of the invention code N06-F only, commencing 199401.
2. The term carboxylate also includes the monothio or dithio compound.
3. The terms alkoxide and aryl oxide also include the thio compounds.
4. When a specific code is searched, the corresponding generic code(s) (used for general disclosures which would otherwise require several specific codes) must also be searched for complete coverage.

Section N codes commenced at 197701.

N01 ALKALI(NE EARTH) METAL, B, Al, Si: ELEMENT, (HYDR)OXIDE, INORGANIC SALT, CARBOXYLATE

N01 **GENERAL**

N01-A **Alkali metal - general**

N01-A01 . **Na or K**

N01-B **Alkaline earth metal**

N01-C **Aluminium - general**

N01-C01 . **Alumina-silica mixture**
Excluding zeolite.
1977-1993
Now coded as: N01-C01A,N01-C01B

N01-C01A .. **Alumina-silica mixture, aluminosilicates, clays**
May contain alkali(ne) earth metals only.
1994
Previous code(s): N01-C01

N01-C01B .. **Aluminosilicates containing/exchanged/loaded with section N02, N03 metals**
Where appropriate, the section N02+, N03 metal code(s) are also assigned.
1994
Previous code(s): N01-C01

N01-C02 . **Alumina**
Excluding N01-C01A, N01-C01B.
1977

N01-C03 . **Aluminum and other aluminum compounds**
Not zeolites, aluminosilicates or alumina.
2002

N01-D **B or Si**
Excluding N01-C01.
1977-1993
Now coded as: N01-D01,N01-D02, N01-D03

N01-D01 . **Boron compounds**
Boron, boron compounds (including non-zeolite borosilicates).
1994
Previous code(s): N01-D

N01-D02 . **Silica, silicates**
Excluding B and Al.
1994
Previous code(s): N01-D

N01-D03 **. Silicon and other silicon compounds**
1994
Previous code(s): N01-D

N02 Fe, Co, Ni, Cu, NOBLE METAL: ELEMENT, (HYDR)OXIDE, INORGANIC SALT, CARBOXYLATE

N02 **GENERAL**

N02-A **Iron - general**

N02-A01 **. Element or oxide**

N02-B **Cobalt - general**

N02-B01 **. Element or oxide**

N02-C **Nickel - general**

N02-C01 **. Element**

N02-D **Copper - general**

N02-D01 **. Element, oxide or sulfide**

N02-E **Ru, Rh, Os, Ir, Ag, Au - general**

N02-E01 **. Ru**
1994
Previous code(s): N02-E

N02-E02 **. Rh**
1994
Previous code(s): N02-E

N02-E03 **. Ag**
1994
Previous code(s): N02-E

N02-E04 **. Os, Ir, Au**
1994
Previous code(s): N02-E

N02-F **Pd or Pt - general**

N02-F01 **. Element on carbon**

N02-F02 **. Element**
Excluding N02-F01.

N02-F03 **. Palladium inorganic compound**
(not complexed)
2006

N02-F04 **. Palladium Carboxylate**
2006

N02-F05 **. Platinum inorganic compound**
(not complexed)
2006

N02-F06 **. Platinum Carboxylate**
2006

N03 OTHER METAL, AS: ELEMENT, (HYDR)OXIDE, INORGANIC SALT, CARBOXYLATE

N03 **GENERAL**

N03-A **Sc, Y, Lanthanoid, Fr, Ra, Actinoid**

N03-A01 **. Sc, Y, La** **2006**
Previous code(s): N03-A

N03-A02 **. Lanthanides – general** **2006**
Previous code(s): N03-A

N03-A02A **.. Ce** **2006**
Previous code(s): N03-A

N03-A02B **.. Other Lanthanides** **2006**
Previous code(s): N03-A

N03-A03 **. Ra, Th, Actinoid, Fr** **2006**
Previous code(s): N03-A

N03-B **Ti, Zr, Hf - general**

N03-B01 **. Ti** **1994**
Previous code(s): N03-B

N03-B01A **.. Ti – Element, (hydr)oxide including titanic acids** **2006**
Previous codes(s): N03-B01

N03-B02 **. Zr, Hf** **1994**
Previous code(s): N03-B

N03-C **V, Nb, Ta, W - general**

N03-C01 **. V** **1994**
Previous code(s): N03-C

N03-C02 **. W** **1994**
Previous code(s): N03-C

N03-C03 **. Nb, Ta** **1994**
Previous code(s): N03-C

N03-D **Cr, Mo - general**

N03-D01 **. Cr** **1994**
Previous code(s): N03-D

N03-D02 **. Mo** **1994**
Previous code(s): N03-D

N03-E **Mn, Tc, Re**

N03-F **Zn, Cd, Hg**

N03-F01 **. Zn** **2006**
Previous code(s): N03-F

N03-F02 **. Cd, Hg** **2006**
Previous code(s): N03-F

N03-G **Ga, In, Tl, Ge, Sn, Pb**

N03-G01 **. In** **2006**
Previous code(s): N03-G

N03-G02 **. Ge** **2006**
Previous code(s): N03-G

N03-G03 **. Sn** **2006**
Previous code(s): N03-G

N03-G04 **. Ga, Tl, Pb** **2006**
Previous code(s): N03-G

N03-H **As, Sb, Bi, Po**

N04 C, N, O, P, S, Se, Te, HALOGEN: ELEMENT, INORGANIC COMPOUND

N04	**GENERAL**
N04-A	**C (excluding N02-F01), N, O, H2O, H2O2, Se, Te, noble gas**
N04-B	**P**
N04-C	**S**
N04-D	**Halogen - general**
N04-D01	**. Metal halide**

N05 METAL HYDRIDE, CO-ORDINATION COMPLEX, ORGANIC COMPOUND EXCLUDING CARBOXYLATE

N05	**GENERAL**
N05-A	**H, metal hydride; metal-alkoxide, -aryl-oxide, -alkyl, -aryl**
N05-B	**Carbonyl complex, pi-bond complex**
N05-C	**Other co-ordination complex**
N05-D	**Amine, quaternary ammonium, heterocyclic and other organic N containing compounds** From 2011, this code has been expanded to include all organic N compounds.
N05-E	**Other organic compound - general**
N05-E01	**. B, Si, P, As, Se, Te, metal present** **1986**
N05-E02	**. S present** **1986**
N05-E03	**. Other compound** **1986**
N05-E03A	**.. Organic resins and other polymers** **2010**
N05-E04	**. Biocatalyst** Biocatalysts, natural catalysts. **2019**
N05-F	**Crown ethers** Crown ethers used as catalyst. **2016**

N06 MOLECULAR SIEVE, ZEOLITE, SPECIAL FORM, GENERAL

N06 **GENERAL**

N06-A **Molecular sieve; zeolite containing Al with no other metal than alkali(ne earth)**

N06-B **Other zeolite, general**

N06-B01 **. Boro- or metallo-aluminosilicates**
1994
Previous code(s): N06-B

N06-B02 **. High silica zeolites**
e.g. Silicalites.
1994
Previous code(s): N06-B

N06-B03 **. Phosphate or silicophosphate based molecular sieves**
Includes aluminosilicophosphates.
2002

N06-C **Special catalyst form - unclassified**
e.g. Raney Nickel.

N06-C01 **. Raney catalysts, alloys**
e.g. Raney Ni.
2002

N06-C02 **. Catalytic (coated) electrodes**
2002

N06-C03 **. Catalytic membranes, diaphragms**
2002

N06-C04 **. Homogenous, soluble or liquid phase catalysts**
2002

N06-C05 **. Fixed bed catalysts**
2002

N06-C06 **. Moving, fluidised bed catalysts (attrition resistant)**
2002

N06-C07 **. Nets, meshes, gauzes, frameworks**
Honeycomb catalysts.
2002

N06-C08 **. Bodies or particles with special shape or form**
2002

N06-C09 **. Nanocatalyst**
2010

N06-C10 **. Photocatalysts**
Materials which induce photocatalytic reaction.
2022

N06-C11 **. MOF catalyst**
Metal Organic Framework type compounds used as catalyst.
2023

N06-C12 **. Heterogenous catalyst**
2024

N06-C13 **. Heteropolyacid catalyst**
2024

N06-D **Catalytic apparatus, testing, detection, determination**

N06-E **Catalyst preparation, recovery, regeneration - gen**
Includes catalyst poisoning resistants or suppressors.

N06-E01 **. Catalyst preparation, activation, pretreatment**
2002

N06-E02 **. Catalyst regeneration, reactivation**
2002

N06-E03 **. Catalyst recovery (metals, values, ligands)**
2002

N06-F **Catalyst support**
Indicates that a feature of the catalyst support (e.g. composition/preparation/properties) forms a significant aspect of the invention. As well as the code N06-F, novel catalyst supports also receive appropriate codes from sections E and N, whereas non-novel catalyst supports code N06-F only.
1994

N06-G **Catalyst promoter**
Includes catalyst accelerator.
2010

N06-H **Phase transfer catalyst**
2011

N07 Catalyst Applications and Uses

1. Used in addition to the N01-N06 codes for process patents
2. Can be used without N01-N06 codes, when catalytic process is defined, but catalyst is unspecific e.g. "acid catalyst".
3. Codes N07-A to N07-K relate to Catalytic Reactions whereas code N07-L relate to Other Catalytic Applications and Uses.

N07 **GENERAL, UNCLASSIFIED, NO SPECIFIC REACTION REPORTED**
2002

N07-A **Catalytic reactions, General**
2002

N07-B **Hydrogenation, hydrogenesis, reduction**
2002

N07-B01 **. Hydrogenation of unsaturated C-C bonds**
2006

N07-B02 **. Hydrogenation other**
2006

N07-C **Oxidation, dehydrogenation - general or unclassified**
2002

N07-C01 **. Oxidation with O2, air**
2002

N07-C02 **. Dehydrogenation of C-C bonds**
2006

N07-C03 **. Other oxidation, dehydrogenation process**
2006

N07-D **Addition/substitution reactions - general or unclassified**
2002

N07-D01 **. Oligomerisation, telomerisation**
2002

N07-D01A **.. Dimerisation**
2022

N07-D02 **. Addition reactions of CO and/or CO2: general or unclassified**
2002

N07-D02A **.. Addition of CO to olefinic bonds: oxo reaction, hydroformylation, etc.**
2002

N07-D02B **.. Other addition reactions of CO(2)**
2002

N07-D03 **. Alkylation, arylation, acylation of C- Atoms**
2002

N07-D04 **. Condensation reactions; other C-C chain extension**
2002

N07-D05 **. Hydration, hydroxylation**
2002

N07-D06 **. Etherification, acetalisation, O-alkylation**
2002

N07-D07 **. Esterification, O-acylation, anhydride formation**
2002

N07-D08 **. Addition of nitrogenous functions - general or unclassified**
2002

N07-D08A **.. Amination, N-alkylation, N-acylation**
2002

N07-D08B **.. Ammonoxidation (ammonia-oxidation) of organics (oxidn. of NH3, see N07-J, inorganic reactions)**
2006

N07-D08C **.. Nitration**
2006

N07-D08D **.. Amidine or guanidine formation**
Reactions involving formation of amidine or guanidine group which may be cyclic or acyclic.
2016

N07-D08E **.. Other specific nitrogenous function formations**
Formation of azo or azide and other specific nitrogenous functions not covered under N07-D08A to N07-D08D.
2022

N07-D09 **. (Hydro)halogenation**
2002

N07-D10 **. Addition of sulfur functions, e.g. sulfonation**
2002

N07-D11 **. Addition of boron, silicon, phosphorus and other functions**
2010

N07-D11A **.. Addition of boron functions**
2010

N07-D11B **.. Addition of silicon functions**
2010

N07-D11C **.. Addition of phosphorus functions**
2010

N07-D11D **.. Addition of other functions**
2010

N07-E **Isomerisation and exchange reactions - general or unclassified**
2002

N07-E01 **. Isomerisation, metathesis, disproportionation of olefinic compounds**
2002

N07-E02 **. Isomerisation reactions of other hydrocarbons; reforming**
2002

N07-E03 **. Transesterification, ether/acetal exchange**
2002

N07-E04 **. Racemisation**
2002

N07-E05 **. Rearrangement reactions**
Any rearrangement reaction which gives a non-isomeric product e.g. Beckmann rearrangement.
2016

N07-E06 **. Asymmetric/enantioselective synthesis**
Catalytic reactions in which single reactants forms unequal mixture of stereoisomers or any one of specific isomer product.
2016

N07-F **Elimination/cleavage reactions - general or unclassified**
2002

N07-F01 **. Decarboxylation, decarbonylation**
2002

N07-F02 **. Dealkylation, cracking, depolymerisation, other C-C bond**
2002

N07-F03 **. De(hydro)halogenation**
2002

N07-F04 **. Ring expansion, contraction cleavage**
2002

N07-F05 **. Chain expansion/contraction**
2006

N07-F06 **. Hydrolysis, dehydration, dehydroxylation**
2010

N07-F06A **.. Hydrolysis**
2010

N07-F06B **.. Dehydration, dehydroxylation**
2010

N07-F06C **.. Dealkoxylation**
Removal of alkoxy groups.
2024

N07-F07 **. Cyclisation**
2006

N07-F07A **.. Carbocyclic cyclisation**
Formation of carbocyclic rings.
2021

N07-F07B **.. Heterocyclic cyclisation**
Formation of heterocyclic rings.
2021

N07-F08 **. Decyclisation**
2006

N07-F09 **. Elimination/cleavage of N functions**
2010

N07-F11 **. Desulfurization**
Applied where desulfurization takes place within the molecule to give a new product.
2014

N07-G **Electrocatalytic reactions**
2002

N07-H **Co-ordination complex, organometallic complex, and salt formation reaction**
Includes salts of organic ammonium compounds and salts of alcohols and counterions.
2014

N07-J **Catalyst use in the production of inorganics**
2002

N07-K **Other chemical reactions**
2002

N07-K01 **. Catalyst for green chemistry**
Catalyst used in an environmentally-friendly process or in degradation of pollutants.
2010

N07-L **Other catalyst applications and uses - unclassified**
2002

N07-L01 **. Purification/waste disposal processes - unclassified**
2002

N07-L01A **.. Catalytic combustion/oxidation of waste**
2002

N07-L01B **.. Water purification; wastewater treatment**
2002

N07-L01B1 **... Industrial effluent treatment**
Mechanism and process used to treat waters that have been contaminated by industrial or commercial activity.
2011

N07-L01C **.. Gas purification; waste gas treatment**
2002

N07-L01C1 **... Engine exhaust treatment**
2002

N07-L01D **.. Purification, (hydro)treatment of non-gaseous hydrocarbons**
2002

N07-L01E **.. Purification of other substances**
2002

N07-L02 **. Removal/treatment of impurities/compounds - general**
2002

N07-L02A **.. Removal/treatment of halogen (compounds)**
2002

N07-L02B **.. Removal/treatment of sulfur (compounds)**
2002

N07-L02C **.. Removal/treatment of nitrogen (compounds)**
2002

N07-L02D **.. Removal/treatment of carbon (compounds)**
2002

N07-L02E **.. Removal/treatment of metal (compounds)**
2002

N07-L02F **.. Removal/treatment of other impurities/compounds**
2002

N07-L03 **. Other processes/uses; general**
2002

N07-L03A **.. Batteries, fuels cells**
2002

N07-L03B **.. Detection processes**
Detection process where catalyst is used as part of detecting agent.
2010

N07-L03C **.. Catalyst used in resolution**
Catalytic process in which mixture of optical isomer is separated into D- and L form.
2022

APPENDICES

Appendix 1 – CPI SUBJECT MATTER COVERAGE

Chemical patents currently covered by DWPI are selected for inclusion in one or more of the following 12 sections:

A Polymers; Plastics
B Pharmaceuticals
C Agricultural Chemicals
D Food, Fermentation, Disinfectants, Detergents
E General Chemicals
F Textiles, Paper, Cellulose
G Printing, Coating, Photographic
H Petroleum
J Chemical Engineering
K Nucleonics, Explosives, Protection
L Glass, Ceramics, Electro(in)organics
M Metallurgy

All patents with these IPCs are guaranteed to be included in the Chemical Patents section:

A01N
A21-A23
A61K
B01
B29
C
D
G21

It should be noted that where an IPC is considered to be inappropriate the normal correspondence between IPC and Clarivate classification does not apply.

Appendix 2 - GREEN TECHNOLOGY

This appendix is designed as a quick reference guide for all manual codes across the chemistry, life sciences and engineering technologies that relate to "green technologies" such as: "green" transportation, e.g. hybrid, fuel cell and other zero emissions vehicles; alternative power sources such as wind and solar power; bio-fuels and any other technologies that enable control of pollution or reduction of carbon footprints.

For full details please look up the relevant code in the applicable manual. Classes A-N are covered by the CPI manual and section P-X by the EPI manual.

Note – Items in italics are of green interest but may contain details not applicable to green technologies.

CARBON CAPTURE	
carbon trading	T01-N01A2M
catalysts	
for the removal/treatment of carbon (compounds)	N07-L02D
for gas purification or waste gas treatment	N07-L01C
gas adsorbents (to store gaseous compounds e.g. CO2)	J06-B06C
gas separation, e.g. separation of CO2 from atmospheric gases	J01-E03
gaseous filters (especially designed for waste gases)	J01-G03B
treatment of waste gases	J01-E02
CONSTRUCTION/BUILDINGS	
doors & windows	
coating for glass	G02-A05K L01-G04
ventilation & sealing (e.g. thermal insulation)	Q48-J
electrical details	X25-U01
general building insulation	Q43-A99
living roof	Q45-A02
pipe protection (e.g. pipe lagging, thermal insulation)	Q67-D
rainwater harvesting system	Q43-H
ENVIRONMENTAL AWARENESS	
biodegradability (of plastics)	A09-A07
environmental vessel for collecting pollution from open water	Q24-P06
environmentally friendly inventions (compositions/applications)	E11-W
green agro-chemicals (general)	C14-Y
green catalysts	N07-K01
green chemistry (general)	E11-K03
applications/compositions	E11-W
green pharmaceuticals (general)	B14-Y
oil spillage cleanup waste containment	H03-G
to prevent water contamination	D04-A05
GREEN TRANSPORTATION	X21
aircraft, muscle/pedal power	Q25-C01G
battery charging	X16-G02
for electric vehicle	X21-B01A
for motor vehicle	X22-F01A
for railway train	X23-A03C
bicycle	Q19-A X22-P01
boat	Q24
animal-drawn	Q24-E02G
canoe/kayak	Q24-P20
electric propulsion	W06-B01C6
muscle/pedal power	Q24-E01G

wind (sail) power	Q24-E01E
	Q24-P22
electric vehicle	Q19-P
	X21-A01F
foot propelled vehicles	Q22-M
fuel cell vehicle	X21-A01J
hybrid vehicle	Q19-Q
	X21-A01D
	X22-P04
hybrid-electric	Q19-Q01
	X22-P04A
hybrid-mechanical	Q19-Q05
	X22-P04E
parallel hybrid	X21-A01D1
series hybrid	X21-A01D3
regenerative braking	X13-F02
	X21-A03C
GREEN POWER SOURCES AND ENERGY GENERATION	A12-W16
battery	X16
catalysts	N07-L03A
for electric vehicle	X21-B01A
carbon trading	T01-N01A2M
electricity generation	
from biomass combustion	X15-E
from exercise machine	W04-X01A5
	X15-X
from vehicle movement	X15-X
from waste fuel combustion	X15-E
environmental protection, e.g. for reducing carbon footprint and improving emissions	
for steam turbine plant	X11-A08
for gas turbine/IC engine/combined cycle & cogeneration plants, etc	
	X11-C08
flywheel energy storage	Q54-F
	X21-B04
fuel cell	X16-C
	L03-E04
catalysts	N07-L03A
for vehicle	X21-B01A
	X22-F01
polymer details	A12-E06
geothermal power	Q54-H
	X15-G
hydroelectric power	X11-B
dams	X11-B
generators	X11-B
mini/micro plant	X11-B05
pumped storage	X11-B06
turbines/water wheels	X11-B01
muscle power	Q54-I
ocean thermal energy conversion	Q54-X
	X15-C
osmotic power	X11-B09
	X15-C
profiting from waste heat	X15-H
IC engine exhaust heat recovery	Q51-J02F
IC engine waste heat recovery	X22-A17
power generation from traffic flow	X15-T
sea power	X15-C
salinity gradient power	X11-B09
	X15-C
smart power grid	*X12-H08*
use of AI	*T01-J16P10*

solar power Q54-H
U12-A02
X15-A
for electric vehicle X21-B04A
for motor vehicle X22-F03
photoelectric cells A12-E11B
solar collector X15-A01
solar panels U12-A02A5
X15-A02B
L03-E05B
polymer details A12-R02B
thermoelectric power X15-D
tidal power X15-C02
vortex power X11-B09
X15-C
water power X11-B
X15-C
water turbine Q54-A
X11-B01
generator X11-B
wave power X15-C01
wind power Q54-G
X15-B
for boat Q24-E01E
for electric vehicle X21-B04A
for motor vehicle X22-F03

GREEN FOOD TECHNOLOGY D03-K13
green packaging D03-K08A

GREEN FUELS
biofuels
produced from algae B14-Y
C14-Y
gaseous biofuels H06-A04
biogas H06-A04
ethane H06-A04
structural details E10-J02D2
hydrogen H06-A03
production by electrical means E31-A02A
hydrogen generation-fuel cell L03-E04I
X16-C17
hydrogen reformer-fuel cell X16-C17
hydrogen storage-fuel cell X16-C15
molecular decomposition of hydrocarbons (plasmatron) V05-F08F
methane H06-A04
structural details E10-J02D1
produced by fermentation D05-C14
liquid biofuels H06-B07
alcohol H06-B08
bioalcohol H06-B08
biodiesel H06-B04A
bioether H06-B07
butanol H06-B08
ethanol H06-B08
propanol H06-B08
vegetable oil H06-B04A
solid biofuels
from municipal/agricultural *D05-A04A*
waste treatment H09-F03

GREEN PACKAGING	Q33-J
food packaging	D03-K08A
packaging in general	Q31 to Q34
polymer packaging	A12-P
biodegradable plastics	A09-A07
scrap recovery/recycling of plastics	A11-C03
by shredding, cutting, pulverising, granulating	A11-C03A
cellulose production (incl. recycling paper bags)	F05-A02B
POLLUTION CONTROL/REDUCTION	
catalytic combustion	N07-L01A
desulphurisation of coal	H09-H02
polymer application	A12-W11
fuel vapour recovery for IC engine	Q51-H02
electrical details	X22-A02E
using coagulants/ flocculants or polyelectrolytes	A12-W11E
other	A12-W11F
oil refinery	H05-L
polymer processing	A11-C07
waste gas treatment	
catalyst details	N07-L01C
for engine exhaust	Q51-J02 E11-Q02A N07-L01C1
for motor vehicle exhaust	Q17-E09 H06-C X22-A03J
removal of N oxides	E31-H02
catalytically	E31-H01
removal of S hydride, H_2S	E31-F01B
removal of S oxide SO_2,SO_3, SO_X	E31-F01A
removal of sulfur compounds	E31-F01 N07-L02B
H_2SO_4, thiosulfate	E31-F01C
RECYCLING/RECOVERY OF MATERIALS	
electrical recycling equipment	X25-W04
chemical extraction, recovery, purification	*E11-Q01*
polymer scrap recovery/recycling	A11-C03
recycling electrical components, equipment, and material	V04-X01G L03-J01
AV equipment	W03-G10C
battery materials	X16-M L03-E06
capacitor materials	
electrolytic	V01-B01G6G
non-electrolytic	V01-B04B8G
copier/printer/fax/scanner parts	S06-K04C
discharge tube salvaging	*V05-L07E6*
phones (landline telephones, smartphones & accessories)	W01-C01W
record carrier recycling and destroying	
general	T03-H02R
magnetic	T03-A01R
magneto-optical	T03-D01R
optical	T03-B01R
resistor materials	*V01-A04R2*
TV receiver	W03-A19C
semiconductors	U11-H L04-X06
recycling/recovery of ceramic	L02-A01
recycling/recovery of fuels	H06-X03
recycling/recovery of glass	L01-B02

recycling/recovery of paper	X25-T09G
	F05-E02B
in copier/printer/fax/scanner	S06-K04A
recycling/recovery of toner	S06-K04B
recycling waste gases	
from semiconductor manufacture	L04-X03
recycling waste water	D04-A06
from semiconductor manufacture	L04-X02
recovery of fibres	F03-E02
recovery of ferrous metals	*M24-A07*
recovery of non-ferrous metals	*M25-E*
recovery of organic products/waste	D05-A04A
e.g. for fertilizer production	
regeneration of pulp liquors during paper and fibre-board mfr.	F05-A02C
other	J09-C01A
WATER/WASTE TREATMENT	E11-Q02
	N07-L01
green water processing	D04-D
industrial waste/effluent treatment	H09-F02
	E11-Q02B
capacitor manufacture	
electrolytic	V01-B01G6E
non-electrolytic	V01-B04B8E
semiconductor manufacture	U11-C15Q
	L04-X02
resistor manufacture	V01-A04R1
municipal/agricultural waste treatment	H09-F03
polymer waste treatment	A11-C07
purification of non-gaseous hydrocarbons	N07-L01D
removal of materials/compounds	
removal of carbon compounds	N07-L02D
removal of catalyst poisons	E11-Q02C
removal of impurities in general	N07-L02
removal of halogen compounds	N07-L02A
removal of metal compounds	N07-L02E
removal of nitrogen compounds	N07-L02C
removal of sulfur compounds	N07-L02B
removal of unwanted chemical reaction byproducts	E11-Q02C
sewage treatment	D04-A01J
	D04-B10
	D04-B11
	D05-A04A
electrical systems	X25-H03
incineration of sludge	D04-B10B
pyrolysis of sludge	D04-B10B
organic waste, town waste or sludge fermenation	*D05-A04A*
waste disposal processes/purification	N07-L01
catalytic combustion of waste	N07-L01A
waste water treatment	N07-L01B
	X25-H03
waste water from paper manufacture	F05-A02C
sewage sludge removal/treatment	D04-B10
electrical systems	X25-H03
dewatering sludge	D04-B10A
water treatment	D04-A01J
	N07-L01B
compositions	*A11-W11J*
removing coal slurry	D04-B03
removing hydrocarbons	D04-B03
removing impurities	D04-B
removing inorganic cyanides	D04-B07A

removing inorganic fluorine compounds and (thio)cyanates	D04-B07E
removing inorganic nitrogen compounds	D04-B07C
removing inorganic phosphorous	D04-B07B
removing inorganic sulfur compounds	D04-B07D
removing metals	D04-B05
heavy metals	D04-B05A
neutralising chromium	D04-B05A
removing lead	D04-B05A
removing mineral oil	D04-B03
removing natural products	D04-B04
clarification of water containing fat	D04-B04
removing organic materials	D04-B06
halohydrocarbons	D04-B06E
organic dyes/brighteners	D04-B06B
phenolic compounds	D04-B06A
polymers/monomers	D04-B06D
surfactants	D04-B06C
removing radioactive materials	D04-B07 K07-B

Appendix 3 – GENETIC ENGINEERING

This appendix is designed as a quick reference guide for all manual codes that relate to genetic engineering.

For full details please look up the relevant code in the CPI manual.

Note – Items in italics are of interest to genetic engineering but may also contain details not applicable to genetic engineering.

BIOLOGICAL MATERIALS FOR USE IN GENETIC ENGINEERING	
newly discovered methylases	B04-L04
	C04-L04
	D05-H19A
newly discovered restriction endonucleases	B04-L05A
	D05-H19A
new or modified DNA and RNA polymerases	B04-L04A
	C04-L04A
	D05-H19B
GENETIC ENGINEERING TECHNIQUES	
Nucleic acid amplification method	
production	B11-C01E
	C11-C01E
	D05-H18B
testing	B11-C08E3
	C11-C08E3
	B11-C08E5
	C11-C08E5
	B11-C08F8
	C11-C08F8
	B12-K04F
	C12-K04F
	D05-H09
	D05-H18B
Nucleic acid sequencing method	B11-C08E4
	C11-C08E4
	B11-C08F7A
	C11-C08F7A
	B12-K04F
	C12-K04F
	D05-H09
	D05-H18A
GENE DELIVERY	
electroporation device	D05-H20
therapeutic	
by non-viral methods	B12-M19B
	C12-M19B
by viral methods	B12-M19A
	C12-M19A
GENE THERAPY	
gene therapy (general)	B14-S03
	C14-S03
antisense therapy	B14-S03B
	C14-S03B
gene therapy	B14-S03A
	C14-S03A
RNA interference	B14-S03C
	B14-S03C

NUCLEIC ACIDS

altered DNA coding sequences

encoding antibodies	B04-E02A
	C04-E02A
encoding antigens	B04-E02J
	C04-E02J
encoding enzymes	B04-E02E
	C04-E02E
encoding hormones	B04-E02C
	C04-E02C
encoding fusion protein	B04-E02H
	C04-E02H
	D05-H12C
general	B04-E02
	C04-E02
engineered mutant sequences	D05-H12B1
encoding modifiers of cell function and growth	B04-E02B
	C04-E02B
encoding nucleic acid	B04-E02K
	C04-E02K
encoding other protein/polypeptide	B04-E02F
	C04-E02F
oncogene	B04-E02G
	C04-E02G
encoding receptors	B04-E02D
	C04-E02D
patent with a Geneseq record	B04-E99
	C04-E99
	D05-H99
vectors, plasmids, cosmids, transposons	B04-E08
	C04-E08
	D05-H12E

PRODUCTION OF RECOMBINANT PROTEINS

fusion proteins	D05-H17C
comprising antibody or antibody fragments	D05-H17C1
mutant proteins/ polypeptides	
antibodies	D05-H17B1
via fermentation/large-scale isolation	*D05-C12*
antigen	D05-H17B5
via fermentation/large-scale isolation	*D05-C12*
cytokine, lymphokine, growth factor, hormone	D05-H17B2
via fermentation/large-scale isolation	*D05-C12*
enzymes	D05-H17B3
via fermentation/large-scale isolation	
coenzymes	D05-C03A
general	D05-C03
hydrolases	D05-C03C
isomerases	D05-C03F
ligases (synthetases)	D05-C03F
lyases	D05-C03E
oxidoreductases	D05-C03B
transferases	D05-C03D
general	D05-H17B
via fermentation/large-scale isolation	*D05-C12*
others	D05-H17B6
via fermentation/large-scale isolation	*D05-C12*
receptor	D05-H17B4
via fermentation/large-scale isolation	*D05-C12*
zinc finger proteins	D05-H17B7
via fermentation/large-scale isolation	D05-C12
protein/polypeptide (general)	D05-H17
via fermentation/large-scale isolation	D05-C12

wild type proteins/ polypeptides

antibodies	D05-H17A1
via fermentation/large-scale isolation	D05-C12
antigen	D05-H17A5
via fermentation/large-scale isolation	D05-C12
cytokine, lymphokine, growth factor, hormone	D05-H17A2
via fermentation/large-scale isolation	D05-C12
enzymes	D05-H17A3
via fermentation/large-scale isolation	
coenzymes	D05-C03A
general	D05-C03
hydrolases	D05-C03C
isomerases	D05-C03F
ligases (synthetases)	D05-C03F
lyases	D05-C03E
oxidoreductases	D05-C03B
transferases	D05-C03D
general	D05-H17A
via fermentation/large-scale isolation	D05-C12
others	D05-H17A6
via fermentation/large-scale isolation	D05-C12
receptor	D05-H17A4
via fermentation/large-scale isolation	D05-C12
zinc finger proteins	D05-H17A7
via fermentation/large-scale isolation	D05-C12

RECOMBINANT PROTEINS

antibodies

antibacteria	B04-G0700E C04-G0700E
antiblood cell	B04-G0600E C04-G0600E
anticancer cell	B04-G0500E C04-G0500E
antienzyme	B04-G0300E C04-G0300E
antifungus	B04-G09A0E C04-G09A0E
antihormone	B04-G0200E C04-G0200E
antimicroorganisms (other)	B04-G0900E C04-G0900E
antimodifier of cell function and growth	B04-G0200E C04-G0200E
antiparasitic	B04-G1200E C04-G1200E
antiplant	B04-G1000E C04-G1000E
anti-prion protein	B04-G2500E C04-G2500E
antiprotozoal	B04-G09B0E C04-G09B0E
antireceptor	B04-G0400E C04-G0400E
antivirus	B04-G0800E C04-G0800E
binding to another antibody	B04-G1100E C04-G1100E
bispecific	B04-G2400E C04-G2400E
catalytic	B04-G2000E C04-G2000E D05-H11C

fragments	B04-G2300E C04-G2300E
general	B04-G0100E C04-G0100E D05-H11
heterospecific	B04-G2600E C04-G2600E
human	B04-G01B0E C04-G01B0E
immunoglobulin A	B04-G27A0E C04-G27A0E
immunoglobulin D	B04-G27D0E C04-G27D0E
immunoglobulin E	B04-G27E0E C04-G27E0E
immunoglobulin G	B04-G27G0E C04-G27G0E
immunoglobulin M	B04-G27M0E C04-G27M0E
immunoglobulin W	B04-G27W0E C04-G27W0E
immunoglobulin X	B04-G27X0E C04-G27X0E
immunoglobulin Y	B04-G27Y0E C04-G27Y0E
monoclonal	B04-G2100E C04-G2100E D05-H11A2
murine	B04-G01D0E C04-G01D0E
polyclonal	B04-G2200E C04-G2200E D05-H11B
enzymes, catalytic proteins	
coenzymes	B04-L0200E C04-L0200E
dehydrogenases, reductases	B04-L03D0E C04-L03D0E
DNA/RNA polymerases	B04-L04A0E C04-L04A0E
enzymes, catalytic proteins (general and other)	B04-L0100E C04-L0100E
esterases (general)	B04-L05A0E C04-L05A0E
isomerases	B04-L0700E C04-L0700E
glycosidases	B04-L05B0E C04-L05B0E
hydrolases (general and other)	B04-L0500E C04-L0500E
kinases	B04-L04C0E C04-L04C0E
ligases	B04-L0800E C04-L0800E
lipoxygenases	B04-L03E0E C04-L03E0E
lyases	B04-L0600E C04-L0600E
metalloprotease	B04-L05C1E C04-L05C1E
oxidases	B04-L03A0E C04-L03A0E

	oxidoreductases (general and other)	B04-L0300E C04-L0300E
	oxygenases	B04-L03C0E C04-L03C0E
	peroxidases	B04-L03B0E C04-L03B0E
	phosphodiesterases	B04-L05A1E C04-L05A1E
	proteases (general)	B04-L05C0E C04-L05C0E
	reverse transcriptase	B04-L04B0E C04-L04B0E
	transferases (general and other)	B04-L0400E C04-L0400E
	translocases	B04-L1000E C04-L1000E
	zymogen and other enzyme precursors	B04-L0900E C04-L0900E
hormones		
	adrenocorticotropic hormone	B04-J05D0E C04-J05D0E
	antidiuretic hormone	B04-J05B0E C04-J05B0E
	angiotensin	B04-J1800E C04-J1800E
	calcitonin	B04-J04A0E C04-J04A0E
	cholecystokinin	B04-J1300E C04-J1300E
	corticotropin-releasing hormone	B04-J0600E C04-J0600E
	ecdysone	B04-J1600E C04-J1600E
	endorphins	B04-J1100E C04-J1100E
	enkephalins	B04-J1100E C04-J1100E
	gastrin	B04-J1200E C04-J1200E
	gonadotropin releasing hormone	B04-J0700E C04-J0700E
	gonadotropins	B04-J05H0E C04-J05H0E
	glucagon	B04-J03B0E C04-J03B0E
	growth hormone-releasing hormone/factor	B04-J0900E C04-J0900E
	hormones (general and other)	B04-J0100E C04-J0100E
	insulin	B04-J03A0E C04-J03A0E
	juvenile hormone	B04-J1700E C04-J1700E
	melanin concentrating hormone	B04-J1900E C04-J1900E
	melanocyte stimulating hormone	B04-J05G0E C04-J05G0E
	motilin	B04-J1200E C04-J1200E
	neurotensin	B04-J1500E C04-J1500E
	pancreatic hormone (general/other)	B04-J0300E C04-J0300E

parathyroid hormone	B04-J04B0E C04-J04B0E
pituitary gland hormones (general/other)	B04-J0500E C04-J0500E
oxytocin	B04-J05A0E C04-J05A0E
secretin	B04-J1200E C04-J1200E
somatostatin	B04-J1000E C04-J1000E
somatropin-releasing factor	B04-J0900E C04-J0900E
tachykinins	B04-J1400E C04-J1400E
thyroid and parathyroid (general/other)	B04-J0400E C04-J0400E
thyroid stimulating hormone	B04-J05F0E C04-J05F0E
thyrotropin releasing hormone	B04-J0800E C04-J0800E
modifiers of cell function and growth	
actin	B04-H20C1E C04-H20C1E
activin A	B04-H1800E C04-H1800E
adhesion and motor molecules (general and other)	B04-H2000E C04-H2000E
bone morphogenetic protein	B04-H06L0E C04-H06L0E
clotting factors	B04-H1900E C04-H1900E
colony stimulating factors (general)	B04-H0400E C04-H0400E
epidermal growth factor	B04-H06A0E C04-H06A0E
erythropoietin and thrombopoietin	B04-H0700E C04-H0700E
fibroblast growth factor	B04-H06G0E C04-H06G0E
fibronectin	B04-H20A0E C04-H20A0E
granulocyte colony stimulating factor	B04-H04A0E C04-H04A0E
granulocyte macrophage colony stimulating	B04-H04C0E C04-H04C0E
growth factors (general/other)	B04-H0600E C04-H0600E
hepatocyte growth factor	B04-H06K0E C04-H06K0E
integrins	B04-H2100E C04-H2100E
interferon (general and other)	B04-H0500E C04-H0500E
interferon alpha	B04-H05A0E C04-H05A0E
interferon beta	B04-H05B0E C04-H05B0E
interferon gamma	B04-H05C0E C04-H05C0E
interferon delta	B04-H05D0E C04-H05D0E
interferon kappa	B04-H05K0E C04-H05K0E

interleukin (general)	B04-H0200E C04-H0200E
interleukin 1	B04-H02A0E C04-H02A0E
interleukin 2	B04-H02B0E C04-H02B0E
interleukin 3	B04-H02C0E C04-H02C0E
interleukin 4	B04-H02D0E C04-H02D0E
interleukin 5	B04-H02F0E C04-H02F0E
interleukin 6	B04-H02G0E C04-H02G0E
interleukin 7	B04-H02H0E C04-H02H0E
interleukin 8	B04-H02J0E C04-H02J0E
interleukin 9	B04-H02K0E C04-H02K0E
interleukin 10	B04-H02L0E C04-H02L0E
interleukin 11	B04-H02M0E C04-H02M0E
interleukin 12	B04-H02N0E C04-H02N0E
interleukin 13	B04-H02P0E C04-H02P0E
interleukin 14-20	B04-H02Q0E C04-H02Q0E
interleukin 21-25	B04-H02R0E C04-H02R0E
interleukin 26-30	B04-H02S0E C04-H02S0E
interleukin 31-35	B04-H02T0E C04-H02T0E
leukemia inhibitory factor	B04-H0900E C04-H0900E
lymphotoxin	B04-H1300E C04-H1300E
macrophage colony stimulating factor	B04-H04B0E C04-H04B0E
macrophage derived growth factor	B04-H06C0E C04-H06C0E
macrophage inflammatory protein	B04-H1100E C04-H1100E
megakaryocyte colony stimulating factor	B04-H04D0E C04-H04D0E
megakaryocyte potentiator	B04-H1200E C04-H1200E
mullerian inhibitory substance	B04-H1000E C04-H1000E
muscle proteins (general)	B04-H20C0E C04-H20C0E
myosin	B04-H20C2E C04-H20C2E
nerve growth growth factor	B04-H06D0E C04-H06D0E
plasminogen activator	B04-H1500E C04-H1500E
platelet activating factor	B04-H1400E C04-H1400E

platelet derived growth factor	B04-H06B0E
	C04-H06B0E
prostatic growth factor	B04-H06J0E
	C04-H06J0E
somatomedins	B04-H06H0E
	C04-H06H0E
stem cell factor	B04-H1600E
	C04-H1600E
sulfation factors	B04-H06H0E
	C04-H06H0E
t-activin	B04-H1700E
	C04-H1700E
thymic factor	B04-H1700E
	C04-H1700E
transforming growth factor	B04-H06F0E
	C04-H06F0E
tropomyosin	B04-H20C3E
	C04-H20C3E
tumour necrosis factor	B04-H0800E
	C04-H0800E
vascular endothelial growth factor	B04-H06M0E
	C04-H06M0E
vitronectin	B04-H20B0E
	C04-H20B0E
other protein/polypeptide	
animal protein/polypeptide	B04-N02A0E
(complete sequence)	C04-N02A0E
animal protein/polypeptide	B04-N0200E
(no sequence)	C04-N0200E
animal protein/polypeptide	B04-N02B0E
(sequence fragments)	C04-N02B0E
bacterial protein/polypeptide	B04-N03J1E
(complete sequence)	C04-N03J1E
bacterial protein/polypeptide	B04-N03J0E
(no sequence)	C04-N03J0E
bacterial protein/polypeptide	B04-N03J2E
(sequence fragments)	C04-N03J2E
fungal protein/polypeptide	B04-N03L1E
(complete sequence)	C04-N03L1E
fungal protein/polypeptide	B04-N03L0E
(no sequence)	C04-N03L0E
fungal protein/polypeptide	B04-N03L2E
(sequence fragments)	C04-N03L2E
fusion proteins	B04-N0800E
	C04-N0800E
glycoprotein	B04-N0600E
	C04-N0600E
ion channel proteins	B04-N0700E
	C04-N0700E
lipoprotein	B04-N0500E
	C04-N0500E
microorganism protein/polypeptide	B04-N03A0E
(complete sequence)	C04-N03A0E
microorganism protein/polypeptide	B04-N0300E
(no sequence)	C04-N0300E
microorganism protein/ polypeptide	B04-N03B0E
(sequence fragments)	C04-N03B0E
molecular chaperones and chaperonins	B04-N0900E
	C04-N0900E
peptidoglycan	B04-N0600E
	C04-N0600E
plant protein/polypeptide	B04-N01A0E
(complete sequence)	C04-N01A0E

plant protein/polypeptide (no sequence)	B04-N0100E C04-N0100E
plant protein/polypeptide (sequence fragments)	B04-N0IB0E C04-N01B0E
prions	B04-N1000E C04-N1000E
protein/polypeptide (undefined origin) (complete sequence)	B04-N04A0E C04-N04A0E
protein/polypeptide (undefined origin) (no sequence)	B04-N0400E C04-N0400E
protein/polypeptide (undefined origin) (sequence fragments)	B04-N04B0E C04-N04B0E
signalling pathway proteins	B04-N1300E C04-N1300E
transcription factors (general)	B04-N1200E C04-N1200E
viral protein/polypeptide (complete sequence)	B04-N03K1E C04-N03K1E
viral protein/polypeptide (complete sequence)	B04-N03K0E C04-N03K0E
viral protein/polypeptide (sequence fragments)	B04-N03K2E C04-N03K2E
zinc finger proteins	B04-N1100E C04-N1100E
patent with a Geneseq record	*B04-E99* *C04-E99* *D05-H99*

receptors

androgen receptors	B04-K01L1E C04-K01L1E
angiotensin receptor	B04-K01N0E C04-K01N0E
antibody receptor	B04-K01W0E C04-K01W0E
bacterial or bacterial antigen receptor	B04-K01T0E C04-K01T0E
blood cell or blood cell antigen receptor	B04-K01R0E C04-K01R0E
cancer cell/cancer cell antigen receptor	B04-K01S0E C04-K01S0E
cell, microbe or antigen receptor (other)	B04-K01V0E C04-K01V0E
corticosteroid receptors	B04-K01L3E C04-K01L3E
dopamine receptor	B04-K01C0E C04-K01C0E
estrogen receptors	B04-K01L2E C04-K01L2E
G-protein coupled receptor	B04-K01Y0E C04-K01Y0E
growth factor receptor	B04-K01J0E C04-K01J0E
histamine receptor	B04-K01F0E C04-K01F0E
hormone receptor (other)	B04-K01P0E C04-K01P0E
insulin receptor	B04-K01M0E C04-K01M0E
interleukin receptor	B04-K01G0E C04-K01G0E
leukotriene receptor	B04- K01H0E C04-K01H0E

lipoprotein receptor	B04-K01Q0E C04-K01Q0E
melanin concentrating hormone receptor	B04-K01Y1E C04-K01Y1E
modifier of cell function and growth receptor (other)	B04-K01K0E C04-K01K0E
non-steroidal nuclear (hormone) receptor	B04-K01X0E C04-K01X0E
parasympathetic receptor	B04-K01A0E C04-K01A0E
peroxisome proliferative activated receptor	B04-K01X1E C04-K01X1E
prostaglandin receptor	B04-K01H0E C04-K01H0E
receptors (general and other)	B04-K0100E C04-K0100E
serotonin receptor	B04-K01D0E C04-K01D0E
steroid receptor (general)	B04-K01L0E C04-K01L0E
steroid receptors (other)	B04-K01L4E C04-K01L4E
sympathetic receptor	B04-K01B0E C04-K01B0E
thromboxane receptor	B04- K01H0E C04-K01H0E
thyroid receptor	B04-K01X2E C04-K01X2E
viral or viral antigen receptor	B04-K01U0E C04-K01U0E
TRANSFORMED CELLS	
cells, microorganisms, transformants, hosts, cell lines, tissue general	B04-F0100E C04-F0100E D05-H14
eukaryotic cells	
algae	B04-F08A0E C04-F08A0E
amphibian	B04-F07B0E C04-F07B0E D05-H14B4
arthropod	B04-F07A0E C04-F07A0E D05-H14B1
avian	B04-F07B0E C04-F07B0E D05-H14B4
blood cells (general)	B04-F0400E C04-F0400E
cancer cells (mammalian)	B04-F02A0E C04-F02A0E D05-H14B2
carcinoma (mammalian)	B04-F02A0E C04-F02A0E D05-H14B2
chimeric cells	B04-F05A0E C04-F05A0E *D05-H15B*
fish	B04-F07B0E C04-F07B0E D05-H14B4
fungus (multicellular, non-higher)	B04-F09E0E C04-F09E0E

fused cells	B04-F05A0E C04-F05A0E *D05-H15B*
germ cells	B04-F0300E C04-F0300E
hybridoma (general)	B04-F0500E C04-F0500E *D05-H15A*
lymphocytes (general)	B04-F04B1E C04-F04B1E
mammalian (including human)	B04-F0200E C04-F0200E D05-H14B2
other animal, non-mammalian (general)	B04-F0700E C04-F0700E D05-H14B4
other white blood cells (general)	B04-F04B2E C04-F04B2E
ova	B04-F0300E C04-F0300E
plant	B04-F0800E C04-F0800E D05-H14B3
platelets	B04-F1300E C04-F1300E
red blood cells	B04-F04A0E C04-F04A0E
reptile	B04-F07B0E C04-F07B0E D05-H14B4
sperm	B04-F0300E C04-F0300E
stem cells (mammalian)	B04-F02B0E C04-F02B2E D05-H14B2
unspecified cell lines	B04-F0100E C04-F0100E D05-H14B
white blood cells (general)	B04-F04B0E C04-F04B0E
microbial cells	
adenovirus	B04-F11A1E C04-F11A1E D05-H12F
algae	B04-F08A0E C04-F08A0E
Aspergillus	B04-F09A0E C04-F09A0E D05-H14A2
Bacillus	B04-F10B1E C04-F10B1E D05-H14A1
bacteria (general)	B04-F1000E C04-F1000E D05-H14A1
Bordetella	B04-F10A1E C04-F10A1E D05-H14A1
Borrelia	B04-F10A2E C04-F10A2E D05-H14A1

Coronavirus	B04-F11B2E C04-F11B2E D05-H12F
DNA viruses (general)	B04-F11A0E C04-F11A0E D05-H12F
Escherichia	B04-F10A3E C04-F10A3E D05-H14A1
fungus (unicellular, general)	B04-F0900E C04-F0900E D05-H14A2
gram-negative bacteria (general/other)	B04-F10A00E C04-F10A00E D05-H14A1
gram-positive genera (general/other)	B04-F10B0E C04-F10B0E D05-H14A1
Mycobacteria	B04-F10B2E C04-F10B2E D05-H14A1
Mycoplasma	B04-F10A4E C04-F10A4E D05-H14A1
Neisseria	B04-F10A5E C04-F10A5E D05-H14A1
Neurospora	B04-F09B0E C04-F09B0E D05-H14A2
protozoa	B04-F0600E C04-F0600E D05-H14A3
Pseudomonas	B04-F10A6E C04-F10A6E D05-H14A1
retrovirus	B04-F11B1E C04-F11B1E D05-H12F
Rickettsia	B04-F10A7E C04-F10A7E D05-H14A1
RNA viruses (general)	B04-F11B0E C04-F11B0E D05-H12F
Saccharomyces	B04-F09C0E C04-F09C0E D05-H14A2
Salmonella	B04-F10A8E C04-F10A8E D05-H14A1
Staphylococcus	B04-F10B3E C04-F10B3E D05-H14A1
Streptococcus	B04-F10B4E C04-F10B4E D05-H14A1
Streptomyces	B04-F10B5E C04-F10B5E D05-H14A1
unspecified microbial cells	B04-F0100E C04-F0100E D05-H14A

Vibrio	B04-F10A9E C04-F10A9E D05-H14A1
viruses (general)	B04-F1100E C04-F1100E D05-H12F
yeast (general)	B04-F0900E C04-F0900E D05-H14A2

TRANSGENIC ORGANISMS

animals

arthropods	B04-P01C0E C04-P01C0E D05-H16A
farm animals	B04-P01B0E C04-P01B0E D05-H16A
general	B04-P0100E C04-P0100E D05-H16A
laboratory experimental animals	B04-P01A0E C04-P01A0E D05-H16A

plants

angiosperms (general)	B04-A08G0E C04-A08G0E D05-H16B
anthocerotophyta (hornworts)	B04-A08A3E C04-A08A3E D05-H16B
ascomycota	B04-A08D1E C04-A08D1E D05-H16B
basidiomycota	B04-A08D2E C04-A08D2E D05-H16B
bryophta (mosses)	B04-A08A2E C04-A08A2E D05-H16B
bryophytes (general)	B04-A08A0E C04-A08A0E D05-H16B
cycadophyta (cycads)	B04-A08F3E C04-A08F3E D05-H16B
dicots	B04-A08G2E C04-A08G2E D05-H16B
equisetopsida	B04-A08B2E C04-A08B2E D05-H16B
fungi (higher)	B04-A08D0E C04-A08D0E D05-H16B
general	B04-A0800E C04-A0800E D05-H16B
ginkgophyta	B04-A08F2E C04-A08F2E D05-H16B
gnetophyta	B04-A08F4E C04-A08F4E D05-H16B

gymnosperms (general)	B04-A08F0E C04-A08F0E D05-H16B
marattiopsida	B04-A08B3E C04-A08B4E D05-H16B
marchantiophyta (liverworts)	B04-A08A1E C04-A08A1E D05-H16B
monocots	B04-A08G1E C04-A08G1E D05-H16B
pinophyta (conifers)	B04-A08F1E C04-A08F1E D05-H16B
polypodiopsida	B04-A08B4E C04-A08B4E D05-H16B
psilotopsida	B04-A08B1E C04-A08B1E D05-H16B
pteridophytes (general)	B04-A08B0E C04-A08B0E D05-H16B

plant extracts

bark	B04-A10H0E C04-A10H0E
bran	B04-A10G0E C04-A10G0E
cereal	B04-A10G0E C04-A10G0E
flower	B04-A10C0E C04-A10C0E
fruit	B04-A10K0E C04-A10K0E
fungi	B04-A10A0E C04-A10A0E
grain	B04-A10G0E C04-A10G0E
hay	B04-A10J0E C04-A10J0E
leaf	B04-A10B0E C04-A10B0E
nuts	B04-A10G0E C04-A10G0E
pollen	B04-A10D0E C04-A10D0E
root	B04-A10F0E C04-A10F0E
sap	B04-A10J0E C04-A10J0E
sawdust	B04-A10H0E C04-A10H0E
seed husk	B04-A10G0E C04-A10G0E
seed meal	B04-A10G0E C04-A10G0E
seed	B04-A10G0E C04-A10G0E
stem	B04-A10J0E C04-A10J0E
straw	B04-A10J0E C04-A10J0E

wood	B04-A10H0E C04-A10H0E
wood shaving	B04-A10H0E C04-A10H0E
plant parts	
bark	B04-A09G0E C04-A09G0E
bran	B04-A09F0E C04-A09F0E
cereal	B04-A09F0E C04-A09F0E
flowers	B04-A09B0E C04-A09B0E
fruit	B04-A09K0E C04-A09K0E
grain	B04-A09F0E C04-A09F0E
hay	B04-A09H0E C04-A09H0E
leaves	B04-A09A0E C04-A09A0E
nuts	B04-A09F0E C04-A09F0E
peat	B04-A09J0E C04-A09J0E
pollen	B04-A09C0E C04-A09C0E
roots	B04-A09D0E C04-A09D0E
sap	B04-A09H0E C04-A09H0E
sawdust	B04-A09G0E C04-A09G0E
seed husks	B04-A09F0E C04-A09F0E
seed meal	B04-A09F0E C04-A09F0E
seeds	B04-A09F0E C04-A09F0E
stems	B04-A09H0E C04-A09H0E
straw	B04-A09H0E C04-A09H0E
wood	B04-A09G0E C04-A09G0E
wood shavings	B04-A09G0E C04-A09G0E
TRANSOMATIC ORGANISMS	
animals	D05-H16C
plants	D05-H16D

Appendix 4: DIGITAL HEALTH

This appendix is designed as a quick reference guide for all manual codes across the chemistry, life sciences and engineering technologies that relate to Digital Health or Digital Healthcare including telemedicine, health information technology, mobile health and personalized medicine.

For full details please look up the relevant codes in the CPI manual (classes A-N), and the GMPI and EPI manual (classes P-X).

ELECTRICAL MEDICAL EQUIPMENT

alarm based on medical parameter or medical failure	S05-Y01 W05-B07G5
built-in phone medical parameter monitoring equipment	W01-C01P8
electrical medical diagnosis/monitoring	S05-D
blood pressure monitoring	S05-D01B1A S02-F04C2
blood flow monitoring	S05-D01B1B
diet/nutrition monitoring	S05-D09
heart rate monitoring	S05-D01B5
implanted device	S05-Y05
ingestible device	S05-Y05
measuring and recording systems for bio-electric currents	S05-D01A
electrocardiography (ECG, EKG)	S05-D01A1
encephalography/myography (EMG, EEG, MEG)	S05-D01A2
measuring neurological/nerve stimulation	S05-D01A
online medicine	T01-N01E
sleep monitoring	S05-D01C7
telediagnosis	S05-D06A
diagnostic displays	S05-D07
hospital equipment	
patient monitoring	S05-G02B2
patient monitoring from remote location	S05-G02B2A
pacemakers	
remote programming and control	S05-A01A5A
artificial organs	B11-C04F
peripheral devices for therapeutic regimens	B11-C06C
transmission of control or measurement signals for medical equipment	W05-D07M

FITNESS/PERFORMANCE TRACKING

performance monitoring during e.g. sports training	W04-A01A1
physiological measurements	S05-D01
smart phones	W01-C01G8S
smart watches	T01-M06A1D S04-B09
wearable computers	T01-M06A1D

HEALTHCARE INFORMATICS - MEDICAL/HOSPITAL IT SYSTEMS

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data transfer/storage	S05-G02G3
data transmission	W01
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protecting against malicious software	W05-D05B5C
preventing or detecting unauthorized network access	W05-D05B5E
data/drug database	B11-C11 T01-J05B4

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T01-J05A2
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T01-J06A
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T01-J30A
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patient medical records S05-G02G1
T01-J05B
T01-J06A1
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protecting against malicious software W05-D05B5C
preventing or detecting unauthorized network access W05-D05B5E
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W05-D07M
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X27-A02
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S05-C

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X25-A08U2
bioprinting B11-C17
X25-A08M3
X25-A08U2
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T01-J13
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B11-C04A
medical parameter monitoring equipment W01-C01P8
pacemakers S05-A01A5A
patient monitoring S05-G02B2
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telediagnosis S05-D06A
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Appendix 5 – NANOTECHNOLOGY

This appendix is designed as a quick reference guide for all manual codes across the chemistry, life sciences and engineering technologies that relate to Nanotech industries.

For full details please look up the relevant code in the applicable manual. Classes A-N are covered by the CPI manual and section P-X by the EPI manual.

Note – Items in italics are of nanotech interest but may contain details not applicable to nanotech.

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	containing heteroatoms	E05-U01
	carbon only	E05-U02
		L02-H04B
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	thermal conductivity agent for polymers	A08-M09C1
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	carbon nanofilm	E05-U05C
	electroconductivity agent for polymers	*A08-M09A1*
	thermal conductivity agent for polymers	*A08-M09C1*
NANOBUDS		
	carbon only	E05-U05D
	inorganic	E31-U04
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NANOCRYSTALS (NON-FERROUS ALLOYS)		M26-C02
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	electronic switching	U21-B01T
	generators	V06-M06G8A
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	motors	V06-M06G9
	control	V06-N22A
	relays	V03-D10A
	resonators	V06-V01E
		V06-V01K2
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	semiconductor structure	U12-B03F2
	semiconductor structure, manufacture	U11-C18C
	semiconductor system	U12-B03F2B
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		V06-V01K2
		V06-V04G
	switches	V03-C10A
	manufacture, testing and monitoring	V03-C07A
	DNA switches	B11-C12
		C11-C12
	transducers(audio)	V06-V01K2
		V06-V04A
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	image display	V05-D05C5A
	field emission device	V05-B05A5C
	general	V05-M03A1
	X-ray tube	V05-E01C7A
	semiconductor structure, manufacture	U11-C13
		U12-E01B2
	logic circuit	U21-C01T
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NANOFILMS		E31-U03 B05-U05B C05-U05B
NANOFILTERS		J01-C04
NANOHORNS		B05-U05A C05-U05A E05-U05D E31-U04
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	manufacture	T03-A02G3
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	ceramics/cement	L02-A14
	conductive	L03-A02G X12-D01D
	electrolytes	X16-J01E
	fuel cell electrode	X16-E06A1A
	fuel cell storage	X16-C15C3A
	general use	V04-X01B1
	insulating	L03-A03N
	insulating, inorganic	X12-E01D
	insulating, organic	X12-E02D
	magnetic	L03-B02N V02-A10
	magnetic, manufacture	V02-A10C
	magnetic, novel	V02-A10A
	production	J04-F02
	semiconductive	L04-A05
	structures	U11-A14 U11-C13
	superconductive	L03-A01C4
	superconducting wires	X12-D07E
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	dye	E27-B02A
	other color chemistry	E27-B03A
NANOPARTICLES		B12-M11Q1 C12-M11Q1
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	inorganic	E31-U01
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NANOPHASE ALLOYS		
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	electrically-insulating (general)	X12-E03D
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		E31-U
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		E05-U03
		L02-H04B
		V05-B05A5C
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	used as thermal conductivity agent for polymers	*A08-M09C1*
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		C05-U04
		E05-U04
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Appendix 6 – ARTIFICIAL INTELLIGENCE (AI)

This appendix is designed as a quick reference guide for all manual codes across the chemistry, life sciences and engineering technologies that relate to Artificial Intelligence.

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	T01-N01A
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  Bacillus B14-A01B5 C14-A01B5
  Bordetella B14-A01A1 C14-A01A1
  Borrellia B14-A01A2 C14-A01A2
  Escherichia B14-A01A3 C14-A01A3
  Mycobacteria B14-A01B1 C14-A01B1
  M. Tuberculosis B14-A01B1A C14-A01B1A
  M. Leprae B14-A01B1B C14-A01B1B
  Mycoplasma B14-A01A4 C14-A01A4
  Neisseria B14-A01A5 C14-A01A5
  Pseudomonas B14-A01A6 C14-A01A6
  Rickettsia B14-A01A7 C14-A01A7
  Salmonella B14-A01A8 C14-A01A8
  Staphylococcus B14-A01B4 C14-A01B4
  Streptococcus B14-A01B2 C14-A01B2
  Streptomyces B14-A01B3 C14-A01B3
  Vibrio B14-A01A9 C14-A01A9
  general B14-A01 C14-A01
  gram-negative general B14-A01A C14-A01A
  gram-positive general B14-A01B C14-A01B
Antibacterial (plant)
  Pseudomonas C14-A01C2
  Agrobacteria C14-A01C3
  Enterobacteria C14-A01C1
  general C14-A01C
Antibiotics B02 C02 E02
  as disinfectants other than of food or air D09-A01C
  biosynthesis D05-C02
Antiblocking agents for polymers A08-M07
Antibody B04-B04C C04-B04C
  antialgal B04-G09 C04-G09
  antiamoebal B04-G09 C04-G09
  antibacterial B04-G07 C04-G07
  antiblood B04-G06 C04-G06
  anticancer B04-B04C4 B04-G05 C04-B04C4 C04-G05
  anticytokine B04-G02 C04-G02
  antienzyme B04-G03 C04-G03
  antifungal B04-G09 C04-G09
  antihormone B04-G02 C04-G02
  antiinterleukin B04-G02 C04-G02
  antilymphokine B04-G02 C04-G02
  antimetabolic factor B04-G02 C04-G02
  antimicrobial (excluding vaccines) B04-B04C3 C04-B04C3
  antimicrobial (other than bacterial or viral) B04-G09 C04-G09
  antiparasitic B04-G12 C04-G12
  antiplant B04-G10 C04-G10
  antireceptor B04-G04 C04-G04
  antiviral B04-G08 C04-G08
  as part of fusion protein D05-H17C1
  binding to another antibody B04-G11 C04-G11
  bispecific antibodies B04-G24 C04-G24
  catalytic antibodies B04-G20 C04-G20
  chimeric B04-G01A C04-G01A
  fragments B04-G23 C04-G23
  general D05-H11
  general and other B04-G01 C04-G01
  heterospecific B04-G26 C04-G26
  human B04-G01B C04-G01B
  humanized B04-G01C C04-G01C
  monoclonal B04-B04C5 B04-G21 C04-B04C5 C04-G21 D05-H11A
  murine B04-G01D C04-G01D
  other B04-B04C6 C04-B04C6

polyclonal B04-G22 C04-G22 D05-H11B
recombinant production of D05-H17A1
recombinant production of mutated antibodies D05-H17B1
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Antibody-producing cells B04-F05 C04-F05 D05-H15A

Antibordetella B14-A01A1 C14-A01A1

Antibradykinin B12-E02 B12-F04 B14-D02B C12-E02 C12-F04 C14-D02B

Antibronzing agents, photographic G06-H11

Anticaking B12-M11A C12-M11A
agents for detergents D11-B04

Anticancer B12-G07 B14-H01 C12-G07 C14-H01

Anticarcinogenic B12-G07 B14-H01 C12-G07 C14-H01

Anticaries B14-N06A C14-N06A

Anticaries composition D08-A05

Anticatabolic B12-J01 B14-E11 C12-J01 C14-E11

Anticataleptic B12-E02 B14-J01A2 C12-E02 C14-J01A2

Anticatatonic B14-J01A2 C14-J01A2

Anticholesterol B12-H03 B14-D02A2 C12-H03 C14-D02A2

Anticholinergic B12-E04 B14-J02B1 C12-E04 C14-J02B1

Anticoagulant B12-H02 B14-F04 C12-H02 C14-F04

Anticonvulsant B12-D04 B14-J07 C12-D04 C14-J07

Anticorrosion additives for water D04-A03

Anticorticosterone B14-D02A C14-D02A

Anticrustacean B12-N04 B14-B04 C12-N04 C14-B04

Anticurl layers, photographic G06-A

Antidehydrogenase B14-D05D C14-D05D

Antidepressant B12-C06 B14-J01A1 C12-C06 C14-J01A1

Antidiabetic B12-H05 B14-S04 C12-H05 C14-S04

Antidiarrhoeal B12-J04 B14-E02 C12-J04 C14-E02

Antidiuretic hormone (ADH) B04-J05B C04-J05B

Antidiuretics B14-N09 C14-N09

Antidopaminergic B14-J02D3 C14-J02D3

Antidotes general and other B12-J05 B14-M01 C12-J05 C14-M01
acute intoxication B14-M03 C14-M03
herbicide B14-M01E C14-M01E
pesticide B14-M01E C14-M01E

Antiemetic B12-D05 B14-E05 C12-D05 C14-E05

Antiepileptic B12-D04 B14-J07 C12-D04 C14-J07

Antiesterase B14-D07A C14-D07A

Antieumycetes B12-A02C B14-A04 C12-A02C C14-A04

Antifebric B12-D08 B14-C04 C12-D08 C14-C04

Antifebrile B12-D08 B14-C04 C12-D08 C14-C04

Antifertility B12-G01A B14-P01 C12-G01A C14-P01

Antifibrillatory B12-F01A B14-F01A C12-F01A C14-F01A

Antifibrinolytic B12-H04 B14-F08 C12-H04 C14-F08

Antifibroblastogenic B12-G07 B14-H01A C12-G07 C14-H01A

Antiflatulent B14-E03 C14-E03

Antifoaming agents A08-S03

Antifoggants (photographic) G06-H03

Antifouling B12-A08 C12-A08 C14-B15
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bactericidal, fungicidal etc. G02-A03B
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for paints G02-A03B
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Antifouling coatings G02-A05G

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Antifungal B12-A02C C12-A02C
Aspergillus B14-A04A C14-A04A
Candida B14-A04B C14-A04B
Microsporum B14-A04C C14-A04C
Trichophyton B14-A04C C14-A04C
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general B14-A04 C14-A04

Antifungal (plant)
Alternaria C14-A06A
Botrytis C14-A06B
Fusarium C14-A06C
Helminthosporium C14-A06D
Phytophora C14-A06E
Pythium C14-A06F
Rhizoctonia C14-A06G
Sclerotinia C14-A06H
Sclerotium C14-A06J
Septoria C14-A06K
Venturia C14-A06L
Verticillium C14-A06M
bunts C14-A06S
Downy mildew C14-A06P
general C14-A06
others C14-A06T
powdery mildew C14-A06N
rice blast treatment C14-A06
rusts C14-A06R
smuts C14-A06S

combating resistant plant fungi C14-A06X
Antigen-antibody reaction apparatus B11-C07A7 C11-C07A7
testing B11-C07 C11-C07
Antigens B04-B04C C04-B04C
microbial B02-V02 B04-B04C1 C02-V02 C04-B04C1
cancer B04-B04C8 C04-B04C8
Allergen B04-B04C9 C04-B04C9
other B04-B04C2 C04-B04C2
Antiglycosidase B14-D07B C14-D07B
Antigout B12-G03 B14-C02 C12-G03 C14-C02
Antigreying agents (in detergents) D11-B01C
Antihaemophilus B12-A01 B14-A01A C12-A01 C14-A01A
Antihaemorrhage B12-H04 B14-F08 C12-H04 C14-F08
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Antihelmintic B12-B02 B14-B03 C12-B02 C14-B03
Antihistamine B12-D06 C12-D06
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H1-secretion inhibitors B14-L10 C14-L10
H2-secretion inhibitors B14-L11 C14-L11
Antihistaminergic B14-L09 C14-L09
Antihormone B12-G01A B14-D02 C12-G01A C14-D02
Antihydrolase B12-G01B3 C12-G01B3
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Antihypercholesterolaemic B12-H03 B14-D02A2 C12-H03 C14-D02A2
Antihypertensive B12-F05 B14-F02B C12-F05 C14-F02B
Antihypotensive B12-F04 B14-F02A C12-F04 C14-F02A
Antihypothermia B14-C05 C14-C05
Antihypoxemia B12-K06 B14-K01 C12-K06 C14-K01
Antiicing additive (fuels) H06-D03
Antiimplantation B12-K03 B14-P01B C12-K03 C14-P01B
Antiinflammatory B12-D07 C12-D07
general B14-C03 C14-C03
Antiisomerase B12-G01B5 B14-D09 C12-G01B5 C14-D09
Antikinases B14-D06C C14-D06C
Antiknock additives (fuels) H06-D04
Antileprotic B12-A03 B14-A01B1 C12-A03 C14-A01B1
Antilichen B12-A02B B14-B08 C12-A02B C14-B08
Antiligase B12-G01B6 B14-D10 C12-G01B6 C14-D10
Antilipaemic B12-H03 B14-F06 C12-H03 C14-F06
Antilisteria B14-A01B C14-A01B
Antilyase B12-G01B4 B14-D08 C12-G01B4 C14-D08
Antimalarial B12-B03 B14-A03B C12-B03 C14-A03B
Antimetabolite B12-G01 C12-G01
Antimetabolite general and other B14-L06 C14-L06
Antimetalloprotease B14-D07C1 C14-D07C1
Antimicrobial B12-A01 C12-A01
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general B14-A01 C14-A01
Antimitotic B12-G07 B14-H01B C12-G07 C14-H01B
Antimony
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Antimony compounds B05-A02 C05-A02
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Antimony production M25-G02
Antimony trioxide flame retardant A08-F02
Antimony-containing
Antimuscarinic B14-J02B2 C14-J02B2
Antimycobacterial B12-A03 B12-A04 B14-A01B1 C12-A03 C12-A04 C14-A01B1
Antimycoplasma B12-A01 B14-A01A4 C12-A01 C14-A01A4
Antimycotic B12-A02 B14-A04 C12-A02 C14-A04
Antineoplastic B12-G07 B14-H01 C12-G07 C14-H01
Antioestrogenic B12-G01A B14-D02A3 C12-G01A3 C14-D02A

Antiovulation B12-G01A B14-P01B C12-G01A C14-P01B

Antioxidant for
- cosmetics D08-B11
- edible fats and oils D10-A03
- food D03-H01P
- fuels H06-D01
- lubricants H07-G01
- pharmaceutical and/or veterinary B14-S08 C14-S08
- polymer A08-A06
- veterinary only B14-S08 B14-S12 C14-S08 C14-S12

Antioxidase B14-D05A C14-D05A

Antioxidoreductase B12-G01B1 C12-G01B1
- general and other B14-D05 C14-D05

Antioxygenase B14-D05C C14-D05C

Antipaludial B12-B03 B14-A03B C12-B03 C14-A03B

Antiparasitic (general) B12-B04 B14-B02 C12-B04 C14-B02
- combating resistant parasites B14-B02X C14-B02X

Antiparkinsonian B12-C04 B14-J01A3 C12-C04 C14-J01A3

Antipepsin B12-G01B3 B14-D07C C12-G01B3 C14-D07C

Antipeptide hormone activity B14-D02B C14-D02B

Antipeptide hydrolase B14-D07C C14-D07C

Antiperoxidase B14-D05B C14-D05B

Antiperspirant B12-L01 B14-R03 C12-L01 C14-R03 D08-B09B2

Antiphlogistic B12-D07 B12-D08 B14-C04 C12-D07 C12-D08 C14-C04

Antiphosphodiesterase B14-D07A1 C14-D07A1

Antiphthisic B12-A04 B12-D02 B12-K02 B14-A01B1 C12-A04 C12-D02 C12-K02 C14-A01B1

Antiplaque B14-N06A C14-N06A

Antiplasmin B12-G01 B12-H04 B14-D07C C12-G01 C12-H04 C14-D07C

Antiplumbing agent, photographic G06-H11

Antiprogestational B12-G01A B14-D02A4 C12-G01A4 C14-D02A

Antiproliferative B14-H01B C14-H01B

Antiproliferative (non-cancerous) B14-H05 C14-H05

Antiprotease B14-D07C C14-D07C

Antiprotozoal B12-B01 C12-B01
- Plasmodium B14-A03B C14-A03B
- antiprotozoal general B14-A03 C14-A03

Antipruritic B12-A07 C12-A07

Antipsychotic B14-J01B3 C14-J01B3

Antipyretic B12-D08 B14-C04 C12-D08 C14-C04

Antirads for polymers A08-A02

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Antireducatase B14-D05D C14-D05D

Antireverse transcriptase B14-D06B C14-D06B

Antirhesus factor C12-G01

Antirheumatic B12-D09 B14-C06 C12-D09 C14-C06

Antirickettsia B14-A01A7 C14-A01A7

Antisaccharomyces B12-A02 B14-A04 C12-A02 C14-A04

Antischizophrenic B14-J01B3 C14-J01B3

Antiscorch agents A08-C06 A08-D+

Antiscorpion B12-N04 B14-B04 C12-N04 C14-B04

Antisecretory B12-J02 C12-J02

Antisenility B12-G04A B14-J01A4 C12-G04A C14-J01A4

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Antiseptic A08-M02 B12-A01 B14-A01 C12-A01 C14-A01

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Antismoking B12-J05B B14-M01B C12-J05B C14-M01B

Antispasmodic B12-E04 B14-J05D C12-E04 C14-J05D

Antispastic B12-E02 B14-J05D C12-E02 C14-J05D

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- for fabrics F03-C05
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Antisteroid general B14-D02A C14-D02A

Antistreptomyces B12-A02C B14-A01B3 C12-A02C C14-A01B3

Antisynthetase B14-D10 C14-D10

Antitarnishing agents, in detergents D11-B05

Antithrombin B14-D07C C14-D07C

Antitick B12-B04 B14-B04A C12-B04 C14-B04A
Antitransferase B12-G01B2 B14-D06 C12-G01B2 C14-D06
Antitremor B12-C04 B12-E04 B14-J01A3 C12-C04 C12-E04 C14-J01A3
Antitreponema B12-B01 B14-A01A C12-B01 C14-A01A
Antitubercular B12-A04 B14-A01B1 C12-A04 C14-A01B1
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Antitussive B12-K01 B14-K01B C12-K01 C14-K01B
Antivenereal B12-A05 B14-N07C C12-A05 C14-N07C
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arbovirus B14-A02A2 C14-A02A2
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coronavirus B14-A02B5 C14-A02B5
DNA viruses general B14-A02A C14-A02A
general B14-A02 C14-A02
hepatitis B virus B14-A02A5 C14-A02A5
herpesvirus B14-A02A3 C14-A02A3
flavivirus B14-A02B9 C14-A02B9
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Influenza treatment C14-A02B2
myxovirus B14-A02B2 C14-A02B2
papovirus B14-A02A6 C14-A02A6
parvovirus B14-A02A9 C14-A02A9
picornavirus B14-A02B3 C14-A02B3
poxvirus B14-A02A4 C14-A02A4
reovirus B14-A02B7 C14-A02B7
retrovirus B14-A02B1 C14-A02B1
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4 rings fused B08-C C08-C E08-C
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catalysts N03-H
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Arsenic compounds
inorganic B05-B02B C05-B02B E31-L
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Aryl of metal, catalyst N05-A
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Ascaricide B12-B02 C12-B02
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ISBN 978-1-912144-49-5

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