

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

**C07 ORGANIC CHEMISTRY** (such compounds as the oxides, sulfides, or oxysulfides of carbon, cyanogen, phosgene, hydrocyanic acid or salts thereof [C01](#); products obtained from layered base-exchange silicates by ion-exchange with organic compounds such as ammonium, phosphonium or sulfonium compounds or by intercalation of organic compounds [C01B 33/44](#); macromolecular compounds [C08](#); dyes [C09](#); fermentation products [C12](#); fermentation or enzyme-using processes to synthesise a desired chemical compound or composition or to separate optical isomers from a racemic mixture [C12P](#); production of organic compounds by electrolysis or electrophoresis [C25B 3/00](#), [C25B 7/00](#))  
(NOTES omitted)

### C07J STEROIDS (seco-steroids [C07C](#))

#### NOTE

This subclass covers compounds containing a cyclopenta[a]hydrophenanthrene skeleton or a ring structure derived therefrom:

- by contraction or expansion of one ring by one or two atoms;
- by contraction or expansion of two rings each by one atom;
- by contraction of one ring by one atom and expansion of one ring by one atom;
- by substitution of one or two carbon atoms of the cyclopenta[a]hydrophenanthrene skeleton, which are not shared by rings, by hetero atoms, in combination with the above defined contraction or expansion or not, or;
- by condensation with carbocyclic or heterocyclic rings in combination with one or more of the foregoing alterations or not.

#### WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

#### **Normal steroids, i.e. cyclopenta(a)hydrophenanthrenes, containing carbon, hydrogen, halogen or oxygen**

##### **1/00 Normal steroids containing carbon, hydrogen, halogen or oxygen, not substituted in position 17 beta by a carbon atom, e.g. estrane, androstane**

- 1/0003 . {Androstane derivatives}
- 1/0007 . . {not substituted in position 17}
- 1/0011 . . {substituted in position 17 by a keto group}
- 1/0014 . . {substituted in position 17 alfa, not substituted in position 17 beta}
- 1/0018 . . {substituted in position 17 beta, not substituted in position 17 alfa}
- 1/0022 . . . {the substituent being an OH group free esterified or etherified}
- 1/0025 . . . . {Esters}
- 1/0029 . . . . {Ethers}
- 1/0033 . . {substituted in position 17 alfa and 17 beta}
- 1/0037 . . . {the substituent in position 17 alfa being a saturated hydrocarbon group}
- 1/004 . . . {the substituent in position 17 alfa being an unsaturated hydrocarbon group}
- 1/0044 . . . . {Alkenyl derivatives}
- 1/0048 . . . . {Alkynyl derivatives}
- 1/0051 . {Estrane derivatives}
- 1/0055 . . {not substituted in position 17}

- 1/0059 . . {substituted in position 17 by a keto group}
- 1/0062 . . {substituted in position 17 alfa not substituted in position 17 beta}
- 1/0066 . . {substituted in position 17 beta not substituted in position 17 alfa}
- 1/007 . . . {the substituent being an OH group free esterified or etherified}
- 1/0074 . . . . {Esters}
- 1/0077 . . . . {Ethers}
- 1/0081 . . {Substituted in position 17 alfa and 17 beta}
- 1/0085 . . . {the substituent in position 17 alfa being a saturated hydrocarbon group}
- 1/0088 . . . {the substituent in position 17 alfa being an unsaturated hydrocarbon group}
- 1/0092 . . . . {Alkenyl derivatives}
- 1/0096 . . . . {Alkynyl derivatives}

##### **3/00 Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 beta by one carbon atom**

- 3/005 . {the carbon atom being part of a carboxylic function}

**5/00** Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 beta by a chain of two carbon atoms, e.g. pregnane and substituted in position 21 by only one singly bound oxygen atom, {i.e. only one oxygen bound to position 21 by a single bond}

- 5/0007 . {not substituted in position 17 alfa}
- 5/0015 . . {not substituted in position 16}
- 5/0023 . . {substituted in position 16}
- 5/003 . . . {by a saturated or unsaturated hydrocarbon group including 16-alkylidene substitutes}
- 5/0038 . . . . {by an alkyl group}
- 5/0046 . {substituted in position 17 alfa}
- 5/0053 . . {not substituted in position 16}
- 5/0061 . . {substituted in position 16}
- 5/0069 . . . {by a saturated or unsaturated hydrocarbon group}
- 5/0076 . . . . {by an alkyl group}
- 5/0084 . . . . {by an alkylene group}
- 5/0092 . . . {by an OH group free esterified or etherified}

**7/00** Normal steroids containing carbon, hydrogen, halogen or oxygen substituted in position 17 beta by a chain of two carbon atoms ([C07J 5/00](#) takes precedence)

- 7/0005 . {not substituted in position 21}
- 7/001 . . {substituted in position 20 by a keto group}
- 7/0015 . . . {not substituted in position 17 alfa}
- 7/002 . . . . {not substituted in position 16}
- 7/0025 . . . . {substituted in position 16}
- 7/003 . . . . . {by a saturated or unsaturated hydrocarbon group}
- 7/0035 . . . . . {by a hydroxy group free esterified or etherified}
- 7/004 . . . {substituted in position 17 alfa}
- 7/0045 . . . . {not substituted in position 16}
- 7/005 . . . . {substituted in position 16}
- 7/0055 . . . . . {by a saturated or unsaturated hydrocarbon group}
- 7/006 . . . . . {by a hydroxy group free esterified or etherified}
- 7/0065 . . {substituted in position 20 by an OH group free esterified or etherified}
- 7/007 . . . {not substituted in position 17 alfa}
- 7/0075 . . . {substituted in position 17 alfa}
- 7/008 . {substituted in position 21}
- 7/0085 . . {by an halogen atom}
- 7/009 . . {by only one oxygen atom doubly bound}
- 7/0095 . . {carbon in position 21 is part of carboxylic group}

**9/00** Normal steroids containing carbon, hydrogen, halogen or oxygen substituted in position 17 beta by a chain of more than two carbon atoms, e.g. cholane, cholestane, coprostane

- 9/005 . {containing a carboxylic function directly attached or attached by a chain containing only carbon atoms to the cyclopenta[a]hydrophenanthrene skeleton}

**11/00** Normal steroids containing carbon, hydrogen, halogen or oxygen, not substituted in position 3

**13/00** Normal steroids containing carbon, hydrogen, halogen or oxygen having a carbon-to-carbon double bond from or to position 17 {(for carbonyl groups [C07J 1/00](#))}

- 13/002 . {with double bond in position 13 (17)}
- 13/005 . {with double bond in position 16 (17)}
- 13/007 . {with double bond in position 17 (20)}

**15/00** Stereochemically pure steroids containing carbon, hydrogen, halogen or oxygen having a partially or totally inverted skeleton, e.g. retrosteroids, L-isomers

- 15/005 . {Retrosteroids (9 beta 10 alfa)}

**17/00** Normal steroids containing carbon, hydrogen, halogen or oxygen, having an oxygen-containing hetero ring not condensed with the cyclopenta(a)hydrophenanthrene skeleton ([cardanolide](#), [bufanolide](#) [C07J 19/00](#))

- 17/005 . {Glycosides}

**19/00** Normal steroids containing carbon, hydrogen, halogen or oxygen, substituted in position 17 by a lactone ring

- 19/005 . {Glycosides}

**21/00** Normal steroids containing carbon, hydrogen, halogen or oxygen having an oxygen-containing hetero ring spiro-condensed with the cyclopenta(a)hydrophenanthrene skeleton

- 21/001 . {Lactones}
- 21/003 . . {at position 17}
- 21/005 . {Ketals}
- 21/006 . . {at position 3}
- 21/008 . . {at position 17}

#### Normal steroids, i.e. cyclopenta(a)hydrophenanthrenes, containing sulfur

**31/00** Normal steroids containing one or more sulfur atoms not belonging to a hetero ring

- 31/003 . {the S atom directly linked to a ring carbon atom of the cyclopenta(a)hydrophenanthrene skeleton}
- 31/006 . {not covered by [C07J 31/003](#)}

**33/00** Normal steroids having a sulfur-containing hetero ring spiro-condensed or not condensed with the cyclopenta(a)hydrophenanthrene skeleton

- 33/002 . {not condensed}
- 33/005 . {spiro-condensed}
- 33/007 . . {Cyclic thioketals}

#### Normal steroids, i.e. cyclopenta(a)hydrophenanthrenes, containing nitrogen

**41/00** Normal steroids containing one or more nitrogen atoms not belonging to a hetero ring

- 41/0005 . {the nitrogen atom being directly linked to the cyclopenta(a)hydro phenanthrene skeleton}
- 41/0011 . . {Unsubstituted amino radicals}
- 41/0016 . . {Oximes}
- 41/0022 . . {Isocyanates; Isothiocyanates}
- 41/0027 . . {Azides}
- 41/0033 . {not covered by [C07J 41/0005](#)}

#### NOTE

In groups [C07J 41/0038](#) - [C07J 41/0094](#) all references to substituents in position 17-beta of

C07J 41/0033

(continued)

the steroid skeleton include substituents at the 17-position when there is a double bond to or from position 17, and all references to an amide group include all nitrogen substituted carbonyl groups

- 41/0038 . . {with an androstane skeleton, including 18- or 19-substituted derivatives, 18-nor derivatives and also derivatives where position 17-beta is substituted by a carbon atom not directly bonded to a further carbon atom and not being part of an amide group}
- 41/0044 . . {with an estrane or gonane skeleton, including 18-substituted derivatives and derivatives where position 17-beta is substituted by a carbon atom not directly bonded to another carbon atom and not being part of an amide group}
- 41/005 . . {the 17-beta position being substituted by an uninterrupted chain of only two carbon atoms, e.g. pregnane derivatives}
- 41/0055 . . {the 17-beta position being substituted by an uninterrupted chain of at least three carbon atoms which may or may not be branched, e.g. cholane or cholestane derivatives, optionally cyclised, e.g. 17-beta-phenyl or 17-beta-furyl derivatives}
- 41/0061 . . . {one of the carbon atoms being part of an amide group}
- 41/0066 . . {the 17-beta position being substituted by a carbon atom forming part of an amide group}
- 41/0072 . . {the A ring of the steroid being aromatic}
- 41/0077 . . {substituted in position 11-beta by a carbon atom, further substituted by a group comprising at least one further carbon atom}
- 41/0083 . . . {substituted in position 11-beta by an optionally substituted phenyl group not further condensed with other rings}
- 41/0088 . . {containing unsubstituted amino radicals}
- 41/0094 . . {containing nitrile radicals, including thiocyanide radicals}

**43/00 Normal steroids having a nitrogen-containing hetero ring spiro-condensed or not condensed with the cyclopenta(a)hydrophenanthrene skeleton**

- 43/003 . {not condensed}
- 43/006 . {spiro-condensed}

**51/00 Normal steroids with unmodified cyclopenta(a)hydrophenanthrene skeleton not provided for in groups [C07J 1/00](#) - [C07J 43/00](#)**

**53/00 Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by condensation with a carbocyclic rings or by formation of an additional ring by means of a direct link between two ring carbon atoms, {including carboxylic rings fused to the cyclopenta(a)hydrophenanthrene skeleton are included in this class}**

- 53/001 . {spiro-linked}
- 53/002 . {Carbocyclic rings fused}
- 53/004 . . {3 membered carbocyclic rings}
- 53/005 . . . {in position 12}
- 53/007 . . . {in position 6-7}
- 53/008 . . . {in position 15/16}

**Nor- or homo steroids**

- 61/00 Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by contraction of only one ring by one or two atoms**
- 63/00 Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by expansion of only one ring by one or two atoms**
  - 63/002 . {Expansion of ring A by one atom, e.g. A homo steroids}
  - 63/004 . {Expansion of ring B by one atom, e.g. B homo steroids}
  - 63/006 . {Expansion of ring C by one atom, e.g. C homo steroids}
  - 63/008 . {Expansion of ring D by one atom, e.g. D homo steroids}
- 65/00 Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by contraction of two rings, each by one atom**
- 67/00 Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by expansion of two rings, each by one atom**
- 69/00 Steroids in which the cyclopenta(a)hydrophenanthrene skeleton has been modified by contraction of only one ring by one atom and expansion of only one ring by one atom**
- 71/00 Steroids in which the cyclopenta(a)hydrophenanthrene skeleton is condensed with a heterocyclic ring ([spiro-condensed heterocyclic rings C07J 21/00](#), [C07J 33/00](#), [C07J 43/00](#))**
  - 71/0005 . {Oxygen-containing hetero ring}
  - 71/001 . . {Oxiranes}
  - 71/0015 . . . {at position 9(11)}
  - 71/0021 . . . {at position 14(15)}
  - 71/0026 . . {cyclic ketals}
  - 71/0031 . . . {at positions 16, 17}
  - 71/0036 . {Nitrogen-containing hetero ring}
  - 71/0042 . . {Nitrogen only}
  - 71/0047 . . . {at position 2(3)}
  - 71/0052 . . . {at position 16(17)}
  - 71/0057 . . {Nitrogen and oxygen}
  - 71/0063 . . . {at position 2(3)}
  - 71/0068 . . . {at position 16(17)}
  - 71/0073 . {Sulfur-containing hetero ring}
  - 71/0078 . . {containing only sulfur}
  - 71/0084 . . . {Episulfides}
  - 71/0089 . . {containing sulfur and oxygen}
  - 71/0094 . . {containing sulfur and nitrogen}
- 73/00 Steroids in which the cyclopenta[a]hydrophenanthrene skeleton has been modified by substitution of one or two carbon atoms by hetero atoms**
  - 73/001 . {by one hetero atom}
  - 73/003 . . {by oxygen as hetero atom}
  - 73/005 . . {by nitrogen as hetero atom}

73/006 . . {by sulfur as hetero atom}

73/008 . {by two hetero atoms}

**75/00 Processes for the preparation of steroids in general**

75/005 . {Preparation of steroids by cyclization of non-steroid compounds}