

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

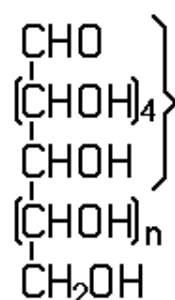
**C07 ORGANIC CHEMISTRY** (such compounds as the oxides, sulfides, or oxysulfides of carbon, cyanogen, phosgene, hydrocyanic acid or salts thereof [C01](#); products obtained from layered base-exchange silicates by ion-exchange with organic compounds such as ammonium, phosphonium or sulfonium compounds 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)

**C07H SUGARS; DERIVATIVES THEREOF; NUCLEOSIDES; NUCLEOTIDES; NUCLEIC ACIDS** (derivatives of aldonic or saccharic acids [C07C](#), [C07D](#); aldonic acids, saccharic acids [C07C 59/105](#), [C07C 59/285](#); cyanohydrins [C07C 255/16](#); glycals [C07D](#); compounds of unknown constitution [C07G](#); polysaccharides, derivatives thereof [C08B](#); DNA or RNA concerning genetic engineering, vectors, e.g. plasmids, or their isolation, preparation or purification [C12N 15/00](#); sugar industry [C13](#))

#### NOTES

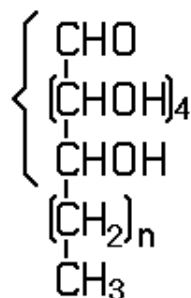
1. This subclass covers compounds containing saccharide radicals (see the definitions in Note (3) below).
2. This subclass does not cover polysaccharides which for the purpose of this subclass are defined as having more than five saccharide radicals attached to each other by glycosidic linkages.
3. In this subclass, the following expressions are used with the meanings indicated:
  - "saccharide radical" which is derived from acyclic polyhydroxy-aldehydes or acyclic polyhydroxy-ketones, or from their cyclic tautomers, by removing hydrogen atoms or by replacing hetero bonds to oxygen by the same number of hetero bonds to halogen, nitrogen, sulfur, selenium, or tellurium, in accordance with either of the following definitions:
    - a. It
      - i. consists of an uninterrupted carbon skeleton and oxygen atoms directly attached thereto, and
      - ii. is considered to be terminated by every bond to a carbon atom of a cyclic structure and by every bond to a carbon atom having three bonds to hetero atoms, e.g. ester or nitrile radicals, and
      - iii. contains within the carbon skeleton an unbranched sequence of at the most six carbon atoms in which at least three carbon atoms — at least two in the case of a skeleton having only four carbon atoms — have one single bond to an oxygen atom as the only hetero bond, and
        - A. in a cyclic or acyclic sequence, at least one other carbon atom has two single bonds to oxygen atoms as the only hetero bonds, or
        - B. in an acyclic sequence, at least one other carbon atom has one double bond to an oxygen atom as the only hetero bond, the said sequence containing at the most one double bond, i.e. C=C or possibly ketalised C=O), in addition

to the hetero bonds mentioned above under (A) or (B), e.g. the compounds



an unbranched

sequence of at the most six carbon atoms, having bonds to oxygen as defined in this Note



n being an integer, are classified in group [C07H 3/02](#);

- b. It is also a radical derived from a radical as defined in (a) above by replacing at the most four of the specified hetero bonds to oxygen by the same number of hetero bonds to halogen, nitrogen, sulfur, selenium, or tellurium;

- "heterocyclic radical" or "hetero ring" is considered to exclude saccharide radicals as defined above

4. Attention is drawn to Note (3) after class [C07](#), which defines the last place priority rule applied in the range of subclasses [C07C-C07K](#) and within these subclasses.

<b>1/00</b>	<b>Processes for the preparation of sugar derivatives</b>	7/04	• Carbocyclic radicals
1/02	• Phosphorylation	7/06	• Heterocyclic radicals
1/04	• . . Introducing polyphosphoric acid radicals	<b>9/00</b>	<b>Compounds containing a hetero ring sharing at least two hetero atoms with a saccharide radical</b>
1/06	• Separation; Purification	9/02	• the hetero ring containing only oxygen as ring hetero atoms
1/08	• . . from natural products	9/04	• . . Cyclic acetals
<b>3/00</b>	<b>Compounds containing only hydrogen atoms and saccharide radicals having only carbon, hydrogen, and oxygen atoms (preparation by hydrolysis of di- or polysaccharides <a href="#">C13</a>; separation or purification of sucrose, glucose, fructose, lactose or maltose <a href="#">C13</a>)</b>	9/06	• the hetero ring containing nitrogen as ring hetero atoms
3/02	• Monosaccharides	<b>11/00</b>	<b>Compounds containing saccharide radicals esterified by inorganic acids; Metal salts thereof (halo-sugars <a href="#">C07H 5/02</a>; thio-, seleno-, or telluro-sugars <a href="#">C07H 5/08</a>)</b>
3/04	• Disaccharides	11/02	• Nitrates; Nitrites
3/06	• Oligosaccharides, i.e. having three to five saccharide radicals attached to each other by glycosidic linkages	11/04	• Phosphates; Phosphites; Polyphosphates
3/08	• Deoxysugars; Unsaturated sugars ( <a href="#">1,2-dideoxy-1-enoses <a href="#">C07D</a></a> ); Osones	<b>13/00</b>	<b>Compounds containing saccharide radicals esterified by carbonic acid or derivatives thereof, or by organic acids, e.g. phosphonic acids</b>
3/10	• Anhydrosugars, e.g. epoxides	13/02	• by carboxylic acids
<b>5/00</b>	<b>Compounds containing saccharide radicals in which the hetero bonds to oxygen have been replaced by the same number of hetero bonds to halogen, nitrogen, sulfur, selenium, or tellurium</b>	13/04	• . . having the esterifying carboxyl radicals attached to acyclic carbon atoms
5/02	• to halogen	13/06	• . . . Fatty acids
5/04	• to nitrogen	13/08	• . . having the esterifying carboxyl radicals directly attached to carbocyclic rings
5/06	• . . Aminosugars	13/10	• . . having the esterifying carboxyl radicals directly attached to heterocyclic rings
5/08	• to sulfur, selenium or tellurium	13/12	• by acids having the group -X-C(=X)-X-, or halides thereof, in which each X means nitrogen, oxygen, sulfur, selenium or tellurium, e.g. carbonic acid, carbamic acid
5/10	• . . to sulfur		
<b>7/00</b>	<b>Compounds containing non-saccharide radicals linked to saccharide radicals by a carbon-to-carbon bond</b>		
7/02	• Acyclic radicals		
7/027	• . . Keto-aldonic acids		
7/033	• . . Uronic acids		

**15/00 Compounds containing hydrocarbon or substituted hydrocarbon radicals directly attached to hetero atoms of saccharide radicals**
**NOTE**

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

- 15/02 . Acyclic radicals, not substituted by cyclic structures
- 15/04 . . attached to an oxygen atom of the saccharide radical
- 15/06 . . . being a hydroxyalkyl group esterified by a fatty acid
- 15/08 . . . Polyoxyalkylene derivatives
- 15/10 . . . containing unsaturated carbon-to-carbon bonds
- 15/12 . . attached to a nitrogen atom of the saccharide radical
- 15/14 . . attached to a sulfur, selenium or tellurium atom of a saccharide radical
- 15/16 . . . Lincomycin; Derivatives thereof
- 15/18 . Acyclic radicals, substituted by carbocyclic rings
- 15/20 . Carbocyclic rings
- 15/203 . . Monocyclic carbocyclic rings other than cyclohexane rings; Bicyclic carbocyclic ring systems
- 15/207 . . Cyclohexane rings not substituted by nitrogen atoms, e.g. kasugamycins
- 15/22 . . Cyclohexane rings, substituted by nitrogen atoms
- 15/222 . . . Cyclohexane rings substituted by at least two nitrogen atoms
- 15/224 . . . . with only one saccharide radical directly attached to the cyclohexyl radical, e.g. destomycin, fortimicin, neamine
- 15/226 . . . . with at least two saccharide radicals directly attached to the cyclohexane rings
- 15/228 . . . . . attached to adjacent ring-carbon atoms of the cyclohexane rings
- 15/23 . . . . . with only two saccharide radicals in the molecule, e.g. ambutyrosin, butyrosin, xylostatin, ribostamycin
- 15/232 . . . . . with at least three saccharide radicals in the molecule, e.g. lividomycin, neomycin, paromomycin
- 15/234 . . . . . attached to non-adjacent ring carbon atoms of the cyclohexane rings, e.g. kanamycins, tobramycin, nebramycin, gentamicin A<sub>2</sub>
- 15/236 . . . . . a saccharide radical being substituted by an alkylamino radical in position 3 and by two substituents different from hydrogen in position 4, e.g. gentamicin complex, sisomicin, verdamycin
- 15/238 . . . Cyclohexane rings substituted by two guanidine radicals, e.g. streptomycins
- 15/24 . . Condensed ring systems having three or more rings
- 15/244 . . . Anthraquinone radicals, e.g. sennosides
- 15/248 . . . Colchicine radicals, e.g. colchicosides
- 15/252 . . . Naphthacene radicals, e.g. daunomycins, adriamycins
- 15/256 . . . Polyterpene radicals
- 15/26 . Acyclic or carbocyclic radicals, substituted by hetero rings

**17/00 Compounds containing heterocyclic radicals directly attached to hetero atoms of saccharide radicals**

- 17/02 . Heterocyclic radicals containing only nitrogen as ring hetero atoms
- 17/04 . Heterocyclic radicals containing only oxygen as ring hetero atoms
- 17/06 . . Benzopyran radicals
- 17/065 . . . Benzo[b]pyrans
- 17/07 . . . . Benzo[b]pyran-4-ones
- 17/075 . . . . Benzo[b]pyran-2-ones
- 17/08 . . Hetero rings containing eight or more ring members, e.g. erythromycins
- 19/00 Compounds containing a hetero ring sharing one ring hetero atom with a saccharide radical; Nucleosides; Mononucleotides ; Anhydro-derivatives thereof**
- 19/01 . sharing oxygen
- 19/02 . sharing nitrogen
- 19/04 . . Heterocyclic radicals containing only nitrogen atoms as ring hetero atom
- 19/044 . . . Pyrrole radicals
- 19/048 . . . Pyridine radicals
- 19/052 . . . Imidazole radicals
- 19/056 . . . Triazole or tetrazole radicals
- 19/06 . . . Pyrimidine radicals
- 19/067 . . . . with ribosyl as the saccharide radical
- 19/073 . . . . with 2-deoxyribosyl as the saccharide radical
- 19/09 . . . . with arabinosyl as the saccharide radical
- 19/10 . . . . with the saccharide radical esterified by phosphoric or polyphosphoric acids
- 19/11 . . . . . containing cyclic phosphate
- 19/12 . . . Triazine radicals
- 19/14 . . . Pyrrolo-pyrimidine radicals
- 19/16 . . . Purine radicals
- 19/167 . . . . with ribosyl as the saccharide radical
- 19/173 . . . . with 2-deoxyribosyl as the saccharide radical
- 19/19 . . . . with arabinosyl as the saccharide radical
- 19/20 . . . . with the saccharide radical esterified by phosphoric or polyphosphoric acids
- 19/207 . . . . . the phosphoric or polyphosphoric acids being esterified by a further hydroxylic compound, e.g. flavine adenine dinucleotide or nicotinamide-adenine dinucleotide
- 19/213 . . . . . containing cyclic phosphate
- 19/22 . . . Pteridine radicals
- 19/23 . . . Heterocyclic radicals containing two or more heterocyclic rings condensed among themselves or condensed with a common carbocyclic ring system, not provided for in groups [C07H 19/14](#) - [C07H 19/22](#)
- 19/24 . . Heterocyclic radicals containing oxygen or sulfur as ring hetero atom

**21/00 Compounds containing two or more mononucleotide units having separate phosphate or polyphosphate groups linked by saccharide radicals of nucleoside groups, e.g. nucleic acids**

- 21/02 . with ribosyl as saccharide radical
- 21/04 . with deoxyribosyl as saccharide radical

## C07H

- 23/00**      **Compounds containing boron, silicon, or a metal, e.g. chelates, vitamin B<sub>12</sub>** ([esters with inorganic acids C07H 11/00](#); metal salts, see parent compounds)
- 99/00**      **Subject matter not provided for in other groups of this subclass**