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=O or possibly ketalised C=O), in addition to the hetero bonds mentioned above under (A) or (B), e.g. the compounds

\[
\begin{align*}
\text{CHO} \\
\text{CHOH}_n \\
\text{CHOH} \\
\text{CHOH}_n \\
\text{CH}_3 \\
\end{align*}
\]

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

\[
\begin{align*}
\text{CHO} \\
\text{CHOH}_n \\
\text{CHOH} \\
\text{H}_2 \text{O} \\
\text{CH}_3 \\
\end{align*}
\]

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;
1/00 Processes for the preparation of sugar derivatives
1/02 . Phosphorylation
1/04 . . Introducing polyphosphoric acid radicals
1/06 . Separation; Purification
1/08 . . from natural products

3/00 Compounds containing only hydrogen atoms and saccharide radicals having only carbon, hydrogen, and oxygen atoms (preparation by hydrolysis of di- or polysaccharides C13; separation or purification of sucrose, glucose, fructose, lactose or maltose C13)
3/02 . Monosaccharides
3/04 . Disaccharides
3/06 . Oligosaccharides, i.e. having three to five saccharide radicals attached to each other by glycosidic linkages
3/08 . Deoxysugars; Unsaturated sugars (1,2-dideoxy-1-enoses C07D); Oseses
3/10 . Anhydrosugars, e.g. epoxides

5/00 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
5/02 . to halogen
5/04 . to nitrogen
5/06 . . Aminosugars
5/08 . to sulfur, selenium or tellurium
5/10 . . to sulfur

7/00 Compounds containing non-saccharide radicals linked to saccharide radicals by a carbon-to-carbon bond
7/02 . Acyl radicals
7/027 . . Keto-aldo nic acids
7/033 . . Uronic acids
7/04 . Carbocyclic radicals
7/06 . Heterocyclic radicals

9/00 Compounds containing a hetero ring sharing at least two hetero atoms with a saccharide radical
9/02 . the hetero ring containing only oxygen as ring hetero atoms
9/04 . . Cyclic acetals
9/06 . the hetero ring containing nitrogen as ring hetero atoms

11/00 Compounds containing saccharide radicals esterified by inorganic acids; Metal salts thereof (halo-sugars C07H 5/02; thio-, seleno-, or telluro-sugars C07H 5/08)
11/02 . Nitrates; Nitrites
11/04 . Phosphates; Phosphites; Polyphosphates

13/00 Compounds containing saccharide radicals esterified by carbonic acid or derivatives thereof, or by organic acids, e.g. phosphonic acids
13/02 . by carboxylic acids
13/04 . . having the esterifying carboxyl radicals attached to acyclic carbon atoms
13/06 . . . Fatty acids

13/08 . . having the esterifying carboxyl radicals directly attached to carbocyclic rings
13/10 . . having the esterifying carboxyl radicals directly attached to heterocyclic rings
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, carboxamic acid

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 . Acyl 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 . Acyl 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 A2
C07H

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 . . . Pyrrole-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

23/00 Compounds containing boron, silicon, or a metal, e.g. chelates, vitamin B₁₂ (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