

CPC**COOPERATIVE PATENT CLASSIFICATION****C08B**

POLYSACCHARIDES; DERIVATIVES THEREOF(polysaccharides containing less than six saccharide radicals attached to each other by glycosidic linkages [C07H](#); fermentation or enzyme-using processes [C12P 19/00](#) ; sugar industry [C13](#); production of cellulose [D21](#))

WARNING

[1202]

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

- [C08B 37/06](#) covered by [C08B 37/0045](#) - [C08B 37/10](#) covered by [C08B 37/0075](#) - [C08B 37/12](#) covered by [C08B 37/0039](#)

Guidance heading: Preparation

- C08B 1/00** {Preparatory treatment of cellulose for making derivatives thereof, e.g. pre-treatment, pre-soaking, activation}
- C08B 1/003** . {Preparation of cellulose solutions, i.e. dopes, with different possible solvents, e.g. ionic liquids(solutions used in the manufacture of monocomponent artificial filaments or cellulose or derivatives thereof [D01F 2/02](#))}
- C08B 1/006** . {Preparation of cuprammonium cellulose solutions}
- C08B 1/02** . Rendering cellulose suitable for esterification{(esterification per se, [C08B 3/00](#) , [C08B 5/00](#) , [C08B 7/00](#) or [C08B 9/00](#))}
- C08B 1/04** . . for the preparation of cellulose nitrate
- C08B 1/06** . Rendering cellulose suitable for etherification{(etherification per se [C08B 11/00](#))}
- C08B 1/08** . Alkali cellulose
- C08B 1/10** . . Apparatus for the preparation of alkali cellulose
- C08B 1/12** . . . Steeping devices
- C08B 1/14** . . . Ripening devices
- C08B 3/00** **Preparation of cellulose esters of organic acids**{(rendering cellulose suitable for esterification [C08B 1/02](#))}
- C08B 3/02** . Catalysts used for the esterification
- C08B 3/04** . Cellulose formate

- C08B 3/06 . {Cellulose acetate, e.g. mono-acetate, di-acetate or tri-acetate}
- C08B 3/08 . of monobasic organic acids with 3 or more carbon atoms,{e.g. propionate or butyrate}
- C08B 3/10 . . with five or more carbon-atoms,{e.g. valerate}
- C08B 3/12 . of polybasic organic acids
- C08B 3/14 . in which the organic acid residue contains substituents, e.g. NH₂, Cl
- C08B 3/16 . Preparation of mixed organic cellulose esters,{e.g. cellulose aceto-formate or cellulose aceto-propionate}
- C08B 3/18 . . Aceto-butyrate
- C08B 3/20 . Esterification with maintenance of the fibrous structure of the cellulose(surface esterification of textiles [D06M 13/00](#))
- C08B 3/22 . Post-esterification treatments, including purification
- C08B 3/24 . . Hydrolysis or ripening
- C08B 3/26 . . Isolation of the cellulose ester
- C08B 3/28 . . . by precipitation
- C08B 3/30 . . Stabilising(by addition of stabilisers [C08K](#))
- C08B 5/00** **Preparation of cellulose esters of inorganic acids,{e.g. phosphates(rendering cellulose suitable for esterification [C08B 1/02](#))}**
- C08B 5/02 . Cellulose nitrate,{i.e. nitrocellulose(rendering cellulose suitable for the preparation of cellulose nitrate [C08B 1/04](#))}
- C08B 5/04 . . Post-esterification treatments,{e.g. densification of powders}, including purification
- C08B 5/06 . . . Isolation of the cellulose nitrate
- C08B 5/08 . . . Stabilisation(by addition of stabilisers [C08K](#));{Post-treatment, e.g. phlegmatisation}
- C08B 5/10 . . . Reducing the viscosity
- C08B 5/12 . . . Replacing the water by organic liquids
- C08B 5/14 . Cellulose sulfate
- C08B 7/00** **Preparation of cellulose esters of both organic and inorganic acids{(rendering cellulose suitable for esterification [C08B 1/02](#))}**
- C08B 9/00** **Cellulose xanthate; Viscose{(formation of films [C08J 5/18](#) ; formation of fibres [D01F](#); rendering cellulose suitable for esterification [C08B 1/02](#))}**
- C08B 9/02 . Sulfidisers; Dissolvers
- C08B 9/04 . Continuous processes

- C08B 9/06
 - . Single-stage processes
- C08B 11/00** **Preparation of cellulose ethers**{(rendering cellulose suitable for etherification [C08B 1/06](#))}
- C08B 11/02
 - . Alkyl or cycloalkyl ethers
- C08B 11/04
 - .. with substituted hydrocarbon radicals
- C08B 11/06
 - ... with halogen-substituted hydrocarbon radicals
- C08B 11/08
 - ... with hydroxylated hydrocarbon radicals; Esters, ethers, or acetals thereof
- C08B 11/10
 - ... substituted with acid radicals
- C08B 11/12
 - substituted with carboxylic radicals,{e.g. [carboxymethylcellulose \(CMC\)](#)}
- C08B 11/14
 - ... with nitrogen-containing groups
- C08B 11/145
 - with basic nitrogen, e.g. aminoalkyl ethers
- C08B 11/15
 - with carbamoyl groups,{i.e. [-CO-NH₂](#)}
- C08B 11/155
 - with cyano groups, e.g. cyanoalkyl ethers
- C08B 11/16
 - . Aryl or aralkyl ethers
- C08B 11/18
 - .. with substituted hydrocarbon radicals
- C08B 11/187
 - . with olefinic unsaturated groups
- C08B 11/193
 - . Mixed ethers, i.e. ethers with two or more different etherifying groups
- C08B 11/20
 - . Post-etherification treatments of chemical or physical type,{e.g. [mixed etherification in two steps](#)}, including purification
- C08B 11/22
 - .. Isolation
- C08B 13/00** **Preparation of cellulose ether-esters**
- C08B 13/02
 - . Cellulose ether xanthates
- C08B 15/00** **Preparation of other cellulose derivatives or modified cellulose**{e.g. [complexes](#)}
- C08B 15/005
 - . {[Crosslinking of cellulose derivatives](#)}
- C08B 15/02
 - . Oxy-cellulose; Hydrocellulose; {[Cellulosehydrate e.g. microcrystalline cellulose](#)}
- C08B 15/04
 - .. Carboxycellulose, e.g. prepared by oxidation with nitrogen dioxide
- C08B 15/05
 - . Derivatives containing elements other than carbon, hydrogen, oxygen, halogens or sulfur([esters or phosphorous acids](#) [C08B 5/00](#))
- C08B 15/06
 - .. containing nitrogen,{e.g. [carbamates](#)}
- C08B 15/08
 - . Fractionation of cellulose, e.g. separation of cellulose crystallites

- C08B 15/10 . Crosslinking of cellulose
- C08B 16/00 Regeneration of cellulose**
- C08B 17/00 Apparatus for esterification or etherification of cellulose**
- C08B 17/02 . for making organic esters of cellulose
- C08B 17/04 . for making cellulose nitrate
- C08B 17/06 . for making cellulose ethers
- C08B 30/00 Preparation of starch, degraded or non-chemically modified starch, amylose, or amylopectin**
- C08B 30/02 . Preparatory treatment, e.g. crushing of raw materials{or steeping process}(machines for preliminary washing [A23N](#))]
- C08B 30/04 . Extraction or purification
- C08B 30/042 . . from cereals or grains
- C08B 30/044 . . . from corn or maize
- C08B 30/046 . . . from wheat
- C08B 30/048 . . from potatoes
- C08B 30/06 . Drying; Forming
- C08B 30/08 . Concentration of starch suspensions
- C08B 30/10 . Working-up residues from the starch extraction,{e.g. potato peel or steeping water}, including pressing water from the starch-extracted material
- C08B 30/12 . Degraded,{destructured}or non-chemically modified starch{e.g. mechanically, enzymatically or by irradiation; Bleaching of starch(preparation of chemical derivatives of starch [C08B 31/00](#))}
- C08B 30/14 . . Cold water dispersible or pregelatinised starch
- C08B 30/16 . . Apparatus therefor
- C08B 30/18 . . Dextrin,{e.g. yellow canari, white dextrin, amylopectin or maltodextrin; Methods of depolymerisation, e.g. by irradiation or mechanically}
- C08B 30/20 . Amylose or amylopectin(chemical derivatives thereof [C08B 33/00](#) , [C08B 35/00](#))
- C08B 31/00 Preparation of derivatives of starch(derivatives of amylose [C08B 33/00](#) ; derivatives of amylopectin [C08B 35/00](#))**
- C08B 31/003 . {Crosslinking of starch}

- C08B 31/006 . . {Crosslinking of derivatives of starch}
- C08B 31/02 . Esters
- C08B 31/04 . . of organic acids,{e.g. alkenyl-succinated starch}
- C08B 31/06 . . of inorganic acids
- C08B 31/063 . . . {Starch sulfates}
- C08B 31/066 . . . {Starch phosphates, e.g. phosphorylated starch}
- C08B 31/08 . Ethers
- C08B 31/10 . . Alkyl or cycloalkyl ethers
- C08B 31/12 . . having alkyl or cycloalkyl radicals substituted by heteroatoms,{e.g. hydroxyalkyl or carboxyalkyl starch}
- C08B 31/125 . . . {having a substituent containing at least one nitrogen atom, e.g. cationic starch}
- C08B 31/14 . . Aryl or aralkyl ethers
- C08B 31/16 . Ether-esters
- C08B 31/18 . Oxidised starch
- C08B 31/185 . . {Derivatives of oxidised starch, e.g. crosslinked oxidised starch}
- C08B 33/00 Preparation of derivatives of amylose**
- C08B 33/02 . Esters
- C08B 33/04 . Ethers
- C08B 33/06 . Ether-esters
- C08B 33/08 . Oxidised amylose
- C08B 35/00 Preparation of derivatives of amylopectin**
- C08B 35/02 . Esters
- C08B 35/04 . Ethers
- C08B 35/06 . Ether-esters
- C08B 35/08 . Oxidised amylopectin
- C08B 37/00 Preparation of polysaccharides not provided for in groups [C08B 1/00](#) to [C08B 35/00](#); Derivatives thereof([cellulose D21](#) ; { [microbiological processes C12P](#)})**
- C08B 37/0003 . {General processes for their isolation or fractionation, e.g. purification or extraction from biomass}

- C08B 37/0006 . {Homoglycans, i.e. polysaccharides having a main chain consisting of one single sugar, e.g. colominic acid}
- C08B 37/0009 .. {alpha-D-Glucans, e.g. polydextrose, alternan, glycogen; (alpha-1,4)(alpha-1,6)-D-Glucans; (alpha-1,3)(alpha-1,4)-D-Glucans, e.g. isolichenan or nigeran; (alpha-1,4)-D-Glucans; (alpha-1,3)-D-Glucans, e.g. pseudonigeran; Derivatives thereof}
- C08B 37/0012 ... {Cyclodextrin (CD), e.g. cycle with 6 units (alpha), with 7 units (beta) and with 8 units (gamma), large-ring cyclodextrin or cycloamylose with 9 units or more; Derivatives thereof}
- C08B 37/0015 {Inclusion compounds, i.e. host-guest compounds, e.g. polyrotaxanes}
- C08B 37/0018 ... {Pullulan, i.e. (alpha-1,4)(alpha-1,6)-D-glucan; Derivatives thereof}
- C08B 37/0021 ... {Dextran, i.e. (alpha-1,4)-D-glucan; Derivatives thereof, e.g. Sephadex, i.e. crosslinked dextran}
- C08B 37/0024 .. {beta-D-Glucans; (beta-1,3)-D-Glucans, e.g. paramylon, coriolan, sclerotan, pachyman, callose, scleroglucan, schizophyllan, laminaran, lentinan or curdlan; (beta-1,6)-D-Glucans, e.g. pustulan; (beta-1,4)-D-Glucans; (beta-1,3)(beta-1,4)-D-Glucans, e.g. lichenan; Derivatives thereof}
- C08B 37/0027 ... {2-Acetamido-2-deoxy-beta-glucans; Derivatives thereof}
- C08B 37/003 {Chitin, i.e. 2-acetamido-2-deoxy-(beta-1,4)-D-glucan or N-acetyl-beta-1,4-D-glucosamine; Chitosan i.e. deacetylated product of chitin or (beta-1,4)-D-glucosamine; Derivatives thereof}
- C08B 37/0033 ... {Xanthan, i.e. D-glucose, D-mannose and D-glucuronic acid units, substituted with acetate and pyruvate, with a main chain of (beta-1,4)-D-glucose units; Derivatives thereof}
- C08B 37/0036 .. {Galactans; Derivatives thereof}
- C08B 37/0039 ... {Agar; Agarose, i.e. D-galactose, 3,6-anhydro-D-galactose, methylated, sulfated, e.g. from the red algae Gelidium and Gracilaria; Agaropectin; Derivatives thereof, e.g. Sepharose, i.e. crosslinked agarose}
- C08B 37/0042 ... {Carragenan or carragen, i.e. D-galactose and 3,6-anhydro-D-galactose, both partially sulfated, e.g. from red algae Chondrus crispus or Gigantia stellata; kappa-Carragenan; iota-Carragenan; lambda-Carragenan; Derivatives thereof}
- C08B 37/0045 .. {alpha-D-Galacturonans, e.g. methyl ester of (alpha-1,4)-linked D-galacturonic acid units, i.e. pectin, or hydrolysis product of methyl ester of alpha-1,4-linked D-galacturonic acid units, i.e. pectinic acid; Derivatives thereof}
- C08B 37/0048 ... {Processes of extraction from organic materials}
- C08B 37/0051 .. {beta-D-Fructofuranans, e.g. beta-2,6-D-fructofuranan, i.e. levan; Derivatives thereof}
- C08B 37/0054 ... {Inulin, i.e. beta-2,1-D-fructofuranan}; Derivatives thereof]
- C08B 37/0057 .. {beta-D-Xylans, i.e. xylosaccharide, e.g. arabinoxylan, arabinofuranan, pentosans; (beta-1,3)(beta-1,4)-D-Xylans, e.g. rhodymenans; Hemicellulose; Derivatives thereof}
- C08B 37/006 . {Heteroglycans, i.e. polysaccharides having more than one sugar residue in the main chain in either alternating or less regular sequence; Gellans; Succinoglycans; Arabinogalactans; Tragacanth or gum tragacanth or traganth from Astragalus; Gum Karaya from Sterculia urens; Gum Ghatti from Anogeissus latifolia; Derivatives thereof}

- C08B 37/0063 . . {Glycosaminoglycans or mucopolysaccharides, e.g. keratan sulfate; Derivatives thereof, e.g. fucoidan}
- C08B 37/0066 . . . {Isolation or extraction of proteoglycans from organs}
- C08B 37/0069 . . . {Chondroitin-4-sulfate, i.e. chondroitin sulfate A ; Dermatan sulfate, i.e. chondroitin sulfate B or beta-heparin ; Chondroitin-6-sulfate, i.e. chondroitin sulfate C; Derivatives thereof}
- C08B 37/0072 . . . {Hyaluronic acid, i.e. HA or hyaluronan; Derivatives thereof, e.g. crosslinked hyaluronic acid (hylan) or hyaluronates}
- C08B 37/0075 . . . {Heparin; Heparan sulfate; Derivatives thereof, e.g. heparosan; Purification or extraction methods thereof}
- C08B 37/0078 {Degradation products}
- C08B 37/0081 {Reaction with amino acids, peptides, or proteins}
- C08B 37/0084 . . {Glucomannuronans, e.g. alginic acid, i.e. D-mannuronic acid and D-guluronic acid units linked with alternating alpha- and beta-1,4-glycosidic bonds; Derivatives thereof, e.g. alginates}
- C08B 37/0087 . . {Glucomannans or galactomannans; Tara or tara gum, i.e. D-mannose and D-galactose units, e.g. from *Cesalpinia spinosa*; Tamarind gum, i.e. D-galactose, D-glucose and D-xylose units, e.g. from *Tamarindus indica*; Gum Arabic, i.e. L-arabinose, L-rhamnose, D-galactose and D-glucuronic acid units, e.g. from *Acacia Senegal* or *Acacia Seyal*; Derivatives thereof}
- C08B 37/009 . . . {Konjac gum or konjac mannan, i.e. beta-D-glucose and beta-D-mannose units linked by 1,4 bonds, e.g. from *Amorphophallus* species; Derivatives thereof}
- C08B 37/0093 . . . {Locust bean gum, i.e. carob bean gum, with (beta-1,4)-D-mannose units in the main chain branched with D-galactose units in (alpha-1,6), e.g. from the seeds of carob tree or *Ceratonia siliqua*; Derivatives thereof}
- C08B 37/0096 . . . {Guar, guar gum, guar flour, guaran, i.e. (beta-1,4) linked D-mannose units in the main chain branched with D-galactose units in (alpha-1,6), e.g. from *Cyamopsis Tetragonolobus*; Derivatives thereof}
- C08B 37/12 . Agar-agar; Derivatives thereof(not used)
- C08B 37/125 . . {Other polysaccharides of algae such as carragenan}(not used)
- C08B 37/14 . Hemicellulose; Derivatives thereof(not used)
- C08B 37/143 . . {composed by pentose units, e.g. xylose, xylan, pentosans, arabinose}(not used)
- C08B 37/146 . . {composed by gluco and/or galactomannans, for example guar gum, locust bean gum}(not used)
- C08B 37/18 . Reserve carbohydrates, e.g. glycogen, inulin, laminarin; Derivatives thereof(not used)