

**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. NH<sub>2</sub>, 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-NH<sub>2</sub>](#) }

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 .. { Guluromannuronans, 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)