

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

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 <i>Cesalpinia spinosa</i> ; Tamarind gum, i.e. D-galactose, D-glucose and D-xylose units, e.g. from <i>Tamarindus indica</i> ; Gum Arabic, i.e. L-arabinose, L-rhamnose, D-galactose and D-glucuronic acid units, e.g. from <i>Acacia Senegal</i> or <i>Acacia Seyal</i> ; 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 <i>Amorphophallus</i> 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 <i>Ceratonia siliqua</i> ; 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 <i>Cyamopsis Tetragonolobus</i> ; 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)