

ECLA**EUROPEAN CLASSIFICATION****D21H****PULP COMPOSITIONS; PREPARATION THEREOF NOT COVERED BY SUBCLASSES D21C or D21D; IMPREGNATING OR COATING OF PAPER; TREATMENT OF FINISHED PAPER NOT COVERED BY CLASS B31 OR SUBCLASS D21G; PAPER NOT OTHERWISE PROVIDED FOR****Notes**

1. This subclass covers also pulp compositions for the preparation of fireboard or other fibrous articles by wet processes.
2. In this subclass, the following terms are used with the meaning indicated:
 - o "pulp" means a dispersion, [N: e.g. an aqueous sus-pension,] comprising paper-making fibres and optional additives, which is to be processed, and covers the term "stock"; it also means dry paper-making fibres which are to be made into paper by either wet or dry processes;
 - o "paper" means paper, cardboard or wet-laid non-woven fabrics.
3. In groups [D21H11/00](#) to [D21H15/00](#), in the absence of an indication to the contrary, classification is made in the last appropriate place.

[N: Note

Attention is drawn to the use of Combination Sets as specified in the Notes after groups [D21H17/00](#), [D21H17/69](#), [D21H17/71](#), [D21H19/00](#), [D21H21/00](#), [D21H21/14](#), [D21H23/00](#), [D21H23/22](#), [D21H25/00](#) and [D21H27/00](#).

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Guide heading:**IPC4 groups****D21H1/00**

[N: IPC4] Paper; Cardboard (fibreboard D21J)

Note

Layered products classified in this group are also classified in subclass B32B

D21H1/02

. [N: IPC 4] Multi-ply material [N: finished plies]

D21H1/04

. . [N: IPC 4] by using an adhesive

D21H1/06

. . [N: IPC 4] Apparatus

D21H1/08

. . [N: IPC 4] with incorporated laminae of threads or fabric

D21H3/00

[N: IPC4] Paper or cardboard prepared by adding substances to the pulp or to the formed web on the paper-making machine [N: and by applying substances to finished paper or cardboard (on the paper-making machine), also when the intention is to impregnate at least a part of the paper body]

Note

A compound is always classified in the last appropriate place.

- D21H3/82 . [N: IPC 4] by adding insoluble coloured substances, e.g. powders, fibres, pieces of metal, for obtaining different colours in the paper [N: fancy papers; substances characterised by their physical appearance, e.g. form, rather than by their chemical constitution]
- D21H3/82B . . [N: substances having a characteristic form, e.g. powders, disintegrated resin foams]
- D21H5/00** [N: IPC4] **Special paper or cardboard not otherwise provided for (duplicating or recording paper B41M)**
- D21H5/00B . [N: Flame-resistant papers; (complex) compositions rendering paper fire-resistant]
- D21H5/00C . [N: Processes or apparatus specially adapted for applying liquids or other fluent materials to finished paper or board, e.g. impregnating, coating (applying liquids to surfaces in general B05; treating textile materials by liquids, gases or vapours D06B; impregnated or coated fibreboard [D21J1/08](#); apparatus for making patterned paper [D21H5/06](#); printing machines B41F)]
- Note**
Equipment related to specific chemical treatment, see relevant sub-groups for this treatment; e.g. parchmentising or vulcanising [D21H5/08](#), treatment with viscose [D21H17/25](#)
- D21H5/00C2 . . [N: Pretreatment of paper to which liquids or other fluent materials are to be applied]
- D21H5/00C4 . . [N: by treating paper or board in discontinuous form, e.g. separate sheets, blanks, paper rolls, or the like]
- D21H5/00C8 . . [N: by bringing paper into contact with an excess of fluids, the paper carrying away only a part of the fluid material e.g. by passing through liquids, gases or vapours]
- D21H5/00C8B . . . [N: only one side of the paper being in contact with the treating medium, e.g. paper carried by support]
- D21H5/00C8B2 [N: Trailing blade coaters, e.g. blade engaging paper and forming bottom wall of reservoir]
- D21H5/00C8D [N: the paper being at least partly surrounded by treating medium on both sides]
- D21H5/00C8D2 [N: treating medium being a gas or vapour]
- D21H5/00C10 . . [N: by contact with a device carrying the treating material (C8 and C12 take precedence)]
- D21H5/00C10B . . . [N: by a rubbing device, e.g. with brushes or pads]
- D21H5/00C10D . . . [N: with a roller]
- D21H5/00C10D2 [N: Details thereof, e.g. surface characteristics, peripheral speed]
- D21H5/00C10D2B [N: the coating material on the applicator roller being subjected to a particular treatment before applying to paper]
- D21H5/00C10D2D [N: Reverse roll coating, e.g. applicator surface moving in direction opposite to that of paper]
- D21H5/00C10F . . . [N: the treating material being non-fluent at the moment of transfer, e.g. in form of preformed, at least partially hardened, coating]
- D21H5/00C12 . . [N: by pouring or allowing to flow in a continuous stream onto the surface, the

- entire stream being carried away by the paper]
- D21H5/00C12B . . . [N: Falling curtain method]
 - D21H5/00C14 . . [N: by spraying or projecting ([D21H5/00C8D2](#) takes precedence)]
 - D21H5/00C16 . . [N: involving several different techniques of application (treatments in which the characteristics of a single treatment are of interest only, or in which all treatments have characteristics provided for in a single sub-group, see the relevant sub-groups for the single treatment; several superposed coatings 19/82; apparatus for making multi-ply material [D21H1/06](#))]
 - D21H5/00C16B . . . [N: Plural serial stages]
 - D21H5/00C16D . . . [N: Plural parallel stages]
 - D21H5/00C16F . . . [N: Apparatus permitting switching from one technique to another]
 - D21H5/00C18 . . [N: Controlling or regulating ([controlling or regulating in general G05](#))]
 - D21H5/00C18B . . . [N: Regulating the amount or the distribution, e.g. smoothing, of essentially fluent material already applied to the paper; Recirculating excess coating material applied to paper ([after-treatment D21H25/00 to D21H25/18](#))]
 - D21H5/00C18B2 [N: with blades ([trailing blade D21H5/00C8B2](#))]
 - D21H5/00C18B4 [N: with an essentially cylindrical body, e.g. roll or rod]
 - D21H5/00C18B6 [N: with a blast of gas or vapour, e.g. air knife]
 - D21H5/00D . . [N: Anti-slip papers]
 - D21H5/00F . . [N: Anti-friction, anti-abrasive or release paper (processes for obtaining an anti-friction or anti-adhesive surface [B05D5/08](#); adhesive materials on paper characterised by the release coating composition [C09J7/04H](#))]
 - D21H5/00G . . [N: Transparent papers, e.g. paper treated with transparent-rendering compositions or glassine paper prepares from well-hydrated stock ([paper with watermarks B41M3/10](#); [watermaking devices D21F1/44](#))]
 - D21H5/00H . . [N: characterised by the use of special fibrous materials as well as special compounds ([use of special fibrous materials D21H5/12](#); [adding substances to the pulp or to the formed web D21H3/00](#))]
 - D21H5/00M . . [N: Wall papers ([printed wallpapers B41M3/18](#); [pregummed wall paper C09J7/04](#))]
 - D21H5/00P . . [N: Paper for surface-protection and decorative purposes, e.g. pressure laminates ([wall paper D21H5/00M](#); [multi-ply material D21H1/02](#))]
 - D21H5/00P4 . . . [N: Aspect concerning the core layer(s)]
 - D21H5/00P6 . . . [N: Aspect concerning the anchor layer(s)]
 - D21H5/00R . . [N: Post-treated paper ([after-treatment following application of substances to finished paper D21H25/00 to D21H25/18, D21H5/00C18B](#); [after-treatment of printed works B41M7/00](#); [working paper B31E](#); [paper from fibres which can be modified D21H5/12R](#))]
 - D21H5/00R2 . . . [N: with means capable of destructing or weakening the paper structure, e.g. cellulose decomposing agents ([working-up waste paper D21C5/02](#))]
 - D21H5/00R4 . . . [N: with means restoring or reinforcing the paper-structure ([preserving paintings B44D7/00](#); [multi-ply material with incorporated laminae of threads or fabric D21H1/08](#))]
 - D21H5/02 . . [N: IPC 4] Patterned paper

- D21H5/02B . . [N: Webs provided with apertures]
- D21H5/04 . . [N: IPC 4] marbled
- D21H5/06 . . [N: IPC 4] Apparatus

- D21H5/08 . [N: IPC 4] Vegetable parchment

- D21H5/12 . [N: IPC 4] characterised by the use of special fibrous materials (felts or other non-woven fabrics [D04](#))
- D21H5/12B . . [N: of protein fibres]
- D21H5/12D . . [N: of crimped or crimpable fibres]
- D21H5/12F . . [N: of polysaccharide fibres other than cellulosic, e.g. alginate fibres]
- D21H5/12G . . [N: of fibres which have been treated to render them suitable for sheet formation, e.g. fibrillatable fibres]
- D21H5/12H . . [N: of long or continuous filaments]
- D21H5/12M . . [N: of fibres which have been treated to improve their dispersion in the paper-making furnish]
- D21H5/12P . . [N: of fibres which have been swollen]
- D21H5/12R . . [N: of fibres which can be physically or chemically modified during or after web formation (after treatment of coated or impregnated papers [D21H25/00](#) to [D21H25/18](#))]

- D21H5/12R2 . . . [N: by chemical treatment]
- D21H5/12R4 . . . [N: by thermal treatment]
- D21H5/14 . . [N: IPC 4] of cellulose fibres only
- D21H5/14B . . . [N: of fibrous cellulose derivatives]
- D21H5/14B4 [N: grafted or encapsulated cellulose]
- D21H5/14B8 [N: cellulose esters]
- D21H5/14B8B [N: cellulose acetate]
- D21H5/14D . . . [N: viscose]
- D21H5/16 . . . [N: IPC 4] Tobacco or cigarette paper
- D21H5/18 . . [N: IPC 4] of inorganic fibres with or without cellulose fibres
- D21H5/18D . . . [N: of asbestos fibres]
- D21H5/18G . . . [N: of mica fibres or flakes]
- D21H5/20 . . [N: IPC 4] of organic non-cellulosic fibres too short for spinning, with or without cellulose fibres
- D21H5/20D . . . [N: polyolefins]
- D21H5/20P . . . [N: acrylic fibres]
- D21H5/20R . . . [N: polyester fibres]

- D21H5/22 . [N: IPC 4] Fungicidal, bactericidal, insecticidal, disinfecting, antiseptic, or corrosion-inhibiting paper [N: antistatic, antioxygenic paper (toilet paper [A47K10/16](#))]

- D21H5/24 . [N: IPC 4] having enhanced flexibility or extensibility produced by mechanical treatment of the unfinished paper (crêping paper [B31F1/12](#); [N: making patterned paper [D21F11/00E](#), apertured paper [D21F11/00G](#)])
- D21H5/24B . . [N: obtained by compressing the (moist) paper in directions lying in, and optionally perpendicular to, the paper plane, e.g. plain-surfaced Clupak papers]

- D21H5/26 . [N: IPC 4] Special paper or cardboard manufactured by dry method; [N: Apparatus or

processes for forming webs by dry method from mainly short-fibre or particle material, e.g. paper pulp (making board from wood, e.g. lignocellulosic, particles or fibres [B27N1/00](#) and subgroups; making non-woven fabrics from textile fibres [D04H1/72](#); machines for forming diapers [A61F13/15M2](#); lap-forming devices in preliminary treatment of fibres, e.g. for spinning [D01G25/00](#))]

- D21H5/26B . . [N: Pretreatment and individualisation of the fibres, formation of the mixture fibres-gas and laying the fibres on a forming surface (manufacture of a pulp sheet or dewatered pulp [D21C9/18B](#))]
- D21H5/26B2 . . . [N: Detachment of the fibres from their compressed state, e.g. by disintegration of a pulpboard (mechanical treatment of fibrous raw materials by dry methods [D21B1/06](#))]
- D21H5/26B4 . . . [N: Distribution of the fibres in the gas stream and on the forming surface]
- D21H5/26B6 . . . [N: Formation of a product from several constituents, e.g. blends of various types of fibres, fillers and/or binders or formation from various sources and/or streams or fibres (mixing non-fibrous materials with fibres as a preliminary treatment of fibres, e.g. for spinning [D01G13/00](#))]
- D21H5/26B6B [N: forming a final homogeneous product]
- D21H5/26B6D [N: forming a final non-homogeneous product]
- D21H5/26D . . [N: Treatment of the formed web]
- D21H5/26D2 . . . [N: Consolidation]
- D21H5/26D2B [N: Addition of a binder, e.g. synthetic resins or water]
- D21H5/26D2D [N: Compression of the web, optionally with the use of a binder]
- D21H5/26F . . [N: Manufacture of layered products (assembly of superposed sheets), comprising the consolidation of such a structure (formation of a web by dry method directly on to other webs formed solely by dry method [D21H5/26B6](#) and subgroups)]
- D21H5/26F2 . . . [N: by dry method on to a web or on or between several preformed webs, at least one of which has been formed by another method, e.g. by wet method]
- D21H5/26F4 . . . [N: Assembly of several preformed webs, at least one of which has been formed by dry method]

D21H11/00 Pulp or paper, comprising cellulose or lignocellulose fibres of natural origin only

- D21H11/02 . Chemical or chemomechanical [N: or chemothermomechanical] pulp
- D21H11/04 . . Kraft or sulfate pulp
- D21H11/06 . . Sulfite or bisulfite pulp
- D21H11/08 . Mechanical or thermomechanical pulp
- D21H11/10 . Mixtures of chemical and mechanical pulp
- D21H11/12 . Pulp from non-woody plants or crops, e.g. cotton, flax, straw, bagasse
- D21H11/14 . Secondary fibres (working-up waste paper [D21C5/02](#))
- D21H11/16 . modified by a particular after-treatment
- D21H11/18 . . Highly hydrated, swollen or fibrillatable fibres
- D21H11/20 . . Chemically or biochemically modified fibres
- D21H11/22 . . . cationised

D21H13/00 **Pulp or paper, comprising synthetic cellulose or non-cellulose fibres or web-forming material (chemical features in the manufacture of artificial fibres [D01F](#))**

- D21H13/02 . Synthetic cellulose fibres
- D21H13/04 . . Cellulose ethers
- D21H13/06 . . Cellulose esters
- D21H13/08 . . from regenerated cellulose

- D21H13/10 . Organic non-cellulose fibres
- D21H13/12 . . from macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
- D21H13/14 . . . Polyalkenes, e.g. polystyrene [N: polyethylene]
- D21H13/16 . . . Polyalkenylalcohols; Polyalkenylethers; Polyalkenylesters
- D21H13/18 . . . Polymers of unsaturated acids or derivatives thereof, e.g. polyacrylonitriles
- D21H13/20 . . from macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- D21H13/22 . . . Condensation polymers of aldehydes or ketones
- D21H13/24 . . . Polyesters
- D21H13/26 . . . Polyamides; Polyimides
- D21H13/28 . . from natural polymers
- D21H13/30 . . . Non-cellulose polysaccharides
- D21H13/32 Alginate fibres
- D21H13/34 . . . Protein fibres

- D21H13/36 . Inorganic fibres or flakes
- D21H13/38 . . siliceous
- D21H13/40 . . . vitreous, e.g. mineral wool, glass fibres
- D21H13/42 . . . Asbestos
- D21H13/44 . . . Flakes, e.g. mica, vermiculite
- D21H13/46 . . Non-siliceous fibres, e.g. from metal oxides
- D21H13/48 . . . Metal or metallised fibres
- D21H13/50 . . . Carbon fibres

D21H15/00 **Pulp or paper, comprising fibres or web-forming material characterised by features other than their chemical constitution**

- D21H15/02 . characterised by configuration
- D21H15/04 . . crimped, kinked, curled or twisted fibres
- D21H15/06 . . Long fibres, i.e. fibres exceeding the upper length limit of conventional paper-making fibres; Filaments
- D21H15/08 . . Flakes (13/44 takes precedence)
- D21H15/10 . . Composite fibres
- D21H15/12 . . . partly organic, partly inorganic

D21H17/00 **Non-fibrous material added to the pulp, characterised by its constitution;**

Paper-impregnating material characterised by its constitution[N: [Note \[C0807\]](#)

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- D21H17/00B . [\[N: Micro-organisms or enzymes\]](#)
- D21H17/01 . Waste products, e.g. sludge
- D21H17/02 . Material of vegetable origin ([proteins D21H17/22](#); [lignins D21H17/23](#); [polysaccharides D21H17/24](#); [rosin D21H17/62](#))
- D21H17/03 . Non-macromolecular organic compounds
- D21H17/04 . . Hydrocarbons
- D21H17/05 . . containing elements other than carbon and hydrogen only
- D21H17/06 . . . Alcohols; Phenols; Ethers; Aldehydes; Ketones; Acetals; Ketals
- D21H17/07 . . . Nitrogen-containing compounds
- D21H17/08 Isocyanates
- D21H17/09 . . . Sulfur-containing compounds
- D21H17/10 . . . Phosphorus-containing compounds
- D21H17/11 . . . Halides
- D21H17/12 . . . Organo-metallic compounds
- D21H17/13 . . . Silicon-containing compounds
- D21H17/14 . . . Carboxylic acids; Derivatives thereof
- D21H17/15 Polycarboxylic acids, e.g. maleic acid
- D21H17/16 Addition products thereof with hydrocarbons
- D21H17/17 . . . Ketenes, e.g. ketene dimers
- D21H17/18 . . . forming new compounds in situ, e.g. within the pulp or paper, by chemical reaction with itself, or other added substances, e.g. by grafting on the fibres
- D21H17/19 by reactions only involving carbon-to-carbon unsaturated bonds
- D21H17/20 . Macromolecular organic compounds
- D21H17/21 . . of natural origin; Derivatives thereof
- D21H17/22 . . . Proteins
- D21H17/23 . . . Lignins
- D21H17/24 . . . Polysaccharides
- D21H17/25 Cellulose
- D21H17/26 Ethers thereof
- D21H17/27 Esters thereof
- D21H17/28 Starch
- D21H17/29 cationic
- D21H17/30 Alginic acid or alginates
- D21H17/31 Gums

D21H17/32	. . . . .	Guar [N: or other polygalactomannan] gum
D21H17/33	. .	Synthetic macromolecular compounds
D21H17/34	. . .	obtained by reactions only involving carbon-to-carbon unsaturated bonds
D21H17/35	. . . .	Polyalkenes, e.g. polystyrene
D21H17/36	. . . .	Polyalkenylalcohols; Polyalkenylethers; Polyalkenylesters
D21H17/37	. . . .	Polymers of unsaturated acids or derivatives thereof, e.g. polyacrylates
D21H17/37B	. . . . .	[N: Poly(meth)acrylamide]
D21H17/38	. . . .	containing crosslinkable groups
D21H17/39	. . . . .	forming ether crosslinkages, e.g. alkylol groups
D21H17/40	. . . . .	unsaturated
D21H17/41	. . . .	containing ionic groups
D21H17/42	. . . . .	anionic
D21H17/43	. . . . .	Carboxyl groups or derivatives thereof
D21H17/44	. . . . .	cationic
D21H17/45	. . . . .	Nitrogen-containing groups
D21H17/45B	. . . . .	{7 dots} [N: comprising tertiary amine or being at least partially quaternised]
D21H17/46	. . .	obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
D21H17/47	. . . .	Condensation polymers of aldehydes or ketones
D21H17/48	. . . . .	with phenols
D21H17/49	. . . . .	with compounds containing hydrogen bound to nitrogen
D21H17/50	. . . . .	Acyclic compounds
D21H17/51	. . . . .	Triazines, e.g. melamine
D21H17/52	. . . .	Epoxy resins
D21H17/53	. . . .	Polyethers; Polyesters
D21H17/54	. . . .	obtained by reactions forming in the main chain of the macromolecule a linkage containing nitrogen
D21H17/55	. . . . .	Polyamides; Polyaminoamides; Polyester-amides
D21H17/56	. . . . .	Polyamines; Polyimines; Polyester-imides
D21H17/57	. . . . .	Polyureas; Polyurethanes
D21H17/58	. . . .	obtained by reactions forming in the main chain of the macromolecule a linkage containing sulfur
D21H17/59	. . . .	obtained by reactions forming in the main chain of the macromolecule a linkage containing silicon
D21H17/60	. .	Waxes
D21H17/61	. .	Bitumen
D21H17/62	. .	Rosin; Derivatives thereof
D21H17/63	. .	Inorganic compounds
D21H17/64	. . .	Alkaline compounds
D21H17/65	. . .	Acid compounds

- D21H17/66 . . Salts, e.g. alums
 - D21H17/67 . . Water-insoluble compounds, e.g. fillers, pigments
 - D21H17/67B . . . [N: Oxides, hydroxides or carbonates]
 - D21H17/68 . . . siliceous, e.g. clays
 - D21H17/69 . . . modified, e.g. by association with other compositions prior to incorporation in the pulp or paper
- [N: **Note** [C0807]
In this group, it is desirable to classify the individual components of the mixtures using Combination Sets with symbols chosen from groups [D21H17/00](#) or [D21H21/00](#).
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- D21H17/70 . . forming new compounds in situ, e.g. within the pulp or paper, by chemical reaction with other substances added separately
 - D21H17/71 . [N: IPC7] Mixtures of material ([D21H17/69](#) takes precedence) [N: Pulp or paper comprising several different materials not incorporated by special processes ([D21H23/10](#), [D21H23/70](#), [D21H23/76](#) take precedence)]
- [N: **Notes** [C0807]
In this group, it is desirable to classify the individual components of the mixtures using Combination Sets with symbols chosen from groups [D21H17/00](#) or [D21H21/00](#).
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- D21H17/72 . . [N: IPC7] of organic material
 - D21H17/73 . . [N: IPC7] of inorganic material
 - D21H17/74 . . [N: IPC7] of organic and inorganic material
- D21H19/00** **Coated paper** (coated fibreboard [D21J1/08](#)); **Coating material** (recording sheets characterised by the coating used to improve ink, dye or pigment receptivity [B41M5/50](#)) [C0808]
- [N: **Note** [C0807]
In this group, it is desirable to classify the individual constituents of the fibres used in the pulp or the paper, the non-fibrous material added to the pulp or the impregnating or coating material, using Combination Sets with symbols chosen from groups [D21H11/00](#) to [D21H17/00](#) or [D21H21/14](#) to [D21H21/56](#).
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- D21H19/02 . Metal coatings ([D21H19/66](#) takes precedence)
 - D21H19/04 . . applied as foil
 - D21H19/06 . . applied as liquid or powder
 - D21H19/08 . . applied as vapour, e.g. in vacuum
 - D21H19/10 . Coatings without pigments ([D21H19/66](#) takes precedence)
 - D21H19/12 . . applied as a solution using water as the only solvent, e.g. in the presence of acid or alkaline compounds
 - D21H19/14 . . applied in a form other than the aqueous solution defined in group [D21H19/12](#)
 - D21H19/16 . . . comprising curable or polymerisable compounds ([D21H19/24](#) takes precedence)
 - D21H19/18 . . . comprising waxes
 - D21H19/20 . . . comprising macromolecular compounds obtained by reactions only involving

- carbon-to-carbon unsaturated bonds
- D21H19/22 Polyalkenes, e.g. polystyrene
- D21H19/24 . . . comprising macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- D21H19/26 Aminoplasts
- D21H19/28 Polyesters
- D21H19/30 Polyamides; Polyimides
- D21H19/32 obtained by reactions forming a linkage containing silicon in the main chain of the macromolecule
- D21H19/34 . . . comprising cellulose or derivatives thereof
- D21H19/36 . Coatings with pigments ([D21H19/66](#) takes precedence; metal powder [D21H19/06](#))
- D21H19/38 . . characterised by the pigments
- D21H19/38B . . . [N: Oxides, hydroxides or carbonates]
- D21H19/40 . . . siliceous, e.g. clays
- D21H19/42 . . . at least partly organic
- D21H19/44 . . characterised by the other ingredients, e.g. the binder or dispersing agent
- D21H19/46 . . . Non-macromolecular organic compounds
- D21H19/48 Diolefins, e.g. butadiene; Aromatic vinyl monomers, e.g. styrene; Polymerisable unsaturated acids or derivatives thereof, e.g. acrylic acid
- D21H19/50 . . . Proteins
- D21H19/52 . . . Cellulose; Derivatives thereof
- D21H19/54 . . . Starch
- D21H19/56 . . . Macromolecular organic compounds or oligomers thereof obtained by reactions only involving carbon-to-carbon unsaturated bonds
- D21H19/58 Polymers or oligomers of diolefins, aromatic vinyl monomers or unsaturated acids or derivatives thereof
- D21H19/60 Polyalkenylalcohols; Polyalkenylethers; Polyalkenylesters
- D21H19/62 . . . Macromolecular organic compounds or oligomers thereof obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- D21H19/64 . . . Inorganic compounds
- D21H19/66 . Coatings characterised by a special visual effect, e.g. patterned, textured ([marbled paper D21H27/04](#))
- D21H19/68 . . uneven, broken, discontinuous
- D21H19/70 . . with internal voids, e.g. bubble coatings
- D21H19/72 . Coated paper characterised by the paper substrate
- D21H19/74 . . the substrate having an uneven surface, e.g. crêped or corrugated paper
- D21H19/76 . . the substrate having specific absorbent properties
- D21H19/78 . . . being substantially impervious to the coating
- D21H19/80 . Paper comprising more than one coating ([D21H19/02](#) takes precedence)
- D21H19/82 . . superposed [N: ([D21H19/84](#) takes precedence)]
- D21H19/82B . . . [N: two superposed coatings, both being pigmented]
- D21H19/82D . . . [N: two superposed coatings, both being non-pigmented]

- D21H19/82F . . . [N: two superposed coatings, the first applied being pigmented and the second applied being non-pigmented]
- D21H19/82H . . . [N: two superposed coatings, the first applied being non-pigmented and the second applied being pigmented]
- D21H19/84 . . . on both sides of the substrate

D21H21/00 Non-fibrous material added to the pulp, characterised by its function, form or properties; Paper-impregnating or coating material, characterised by its function, form or properties

[N: **Note**[C0807]

In groups [D21H21/00](#) to [D21H21/12](#), it is desirable to classify the individual constituents of the fibres used in the pulp or the paper, the non-fibrous material added to the pulp or the impregnating or coating material, using Combination Sets with symbols chosen from groups [D21H11/00](#) to [D21H17/00](#).

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- D21H21/02 . Agents for preventing deposition on the paper mill equipment, e.g. pitch or slime control ([removal of fats, resins, pitch, or waxes D21C9/08](#))
- D21H21/04 . . Slime-control agents
- D21H21/06 . Paper forming aids
- D21H21/08 . . Dispersing agents for fibres
- D21H21/10 . . Retention agents or drainage improvers
- D21H21/12 . . Defoamers
- D21H21/14 . characterised by function or properties in or on the paper ([D21H19/66](#), [D21H27/02](#) take precedence)

[N: **Notes** [C0807]

In groups [D21H21/14](#) to [D21H21/56](#), it is desirable to classify the individual constituents of the fibres used in the pulp or the paper, the non-fibrous material added to the pulp or the impregnating or coating material, using Combination Sets with symbols chosen from groups [D21H11/00](#) to [D21H19/00](#).

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- D21H21/14B . . [N: Agents preventing ageing of paper, e.g. radiation absorbing substances]
- D21H21/14D . . [N: Crêping adhesives]
- D21H21/16 . . Sizing or water-repelling agents
- D21H21/18 . . Reinforcing agents
- D21H21/20 . . . Wet strength agents
- D21H21/22 . . Agents rendering paper porous, absorbent or bulky
- D21H21/24 . . . Surfactants
- D21H21/26 . . Agents rendering paper transparent or translucent
- D21H21/28 . . Colorants; [N: Pigments or opacifying agents]
- D21H21/28B . . . [N: insoluble]
- D21H21/30 . . Luminescent or fluorescent substances, e.g. for optical bleaching ([D21H21/40](#) takes precedence)
- D21H21/32 . . Bleaching agents ([bleaching cellulose pulp D21C9/10](#))
- D21H21/34 . . Ignifugeants

- D21H21/36 . . Biocidal agents, e.g. fungicidal, bactericidal, insecticidal agents
- D21H21/38 . . Corrosion-inhibiting agents or anti-oxidants
- D21H21/40 . . Agents facilitating proof of genuineness or preventing fraudulent alteration, e.g. for security paper ([watermarking B41M3/10, D21F1/44](#); [security printing B41M3/14](#); [securities or banknotes characterised by colour effects \[N: B42D15/00\]](#); [testing paper currency or valuable papers for genuineness G07D7/00](#))
- D21H21/42 . . . Ribbons or strips ([filaments D21H15/06](#))
- D21H21/44 . . . Latent security elements, i.e. detectable or becoming apparent only by use of special verification or tampering devices or methods
- D21H21/46 Elements suited for chemical verification or impeding chemical tampering, e.g. by use of eradicators
- D21H21/48 Elements suited for physical verification, e.g. by irradiation
- D21H21/50 . characterised by form ([D21H19/66, D21H21/42, D21H27/02 take precedence](#))
- D21H21/52 . . Additives of definite length or shape
- D21H21/54 . . . being spherical, e.g. microcapsules, beads
- D21H21/56 . . Foam

D21H23/00 **Processes or apparatus for adding material to the pulp or to the paper** ([applying liquids or other fluent material to surfaces, in general B05](#); [processes for making continuous lengths of paper D21F11/00](#))

[N: [Notes \[C0807\]](#)

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- D21H23/02 . characterised by the manner in which substances are added
- D21H23/04 . . Addition to the pulp; After-treatment of added substances in the pulp
- D21H23/06 . . . Controlling the addition
- D21H23/08 by measuring pulp properties, e.g. zeta potential, pH
- D21H23/10 at least two kinds of compounds being added
- D21H23/12 by measuring properties of the formed web
- D21H23/14 by selecting point of addition or time of contact between components
- D21H23/16 Addition before or during pulp beating or refining ([disintegrating fibrous raw materials in mills in the presence of chemical agents D21B1/16](#); [methods of beating D21D1/02](#); [methods of refining D21D1/20](#))
- D21H23/18 Addition at a location where shear forces are avoided before sheet-forming, e.g. after pulp beating or refining
- D21H23/20 . . . Apparatus therefor
- D21H23/22 . . Addition to the formed paper

[N: [Notes \[C0807\]](#)

In groups [D21H23/22](#) to [D21H23/78](#), it is desirable to classify the individual constituents of the fibres used in the pulp or the paper, the non-fibrous material added to the pulp or the impregnating or coating material, using Combination Sets with symbols chosen from groups [D21H11/00](#) to [D21H21/00](#).

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- D21H23/24 . . . during paper manufacture
- D21H23/26 by selecting point of addition or moisture content of the paper

- D21H23/28 Addition before the dryer section, e.g. at the wet end or press section
- D21H23/30 Pretreatment of the paper ([D21H23/70](#), [D21H23/76](#) take precedence)
- D21H23/32 by contacting paper with an excess of material, e.g. from a reservoir or in a manner necessitating removal of applied excess material from the paper ([D21H23/66](#) takes precedence; removing excess material [D21H25/08](#))
- D21H23/34 Knife or blade type coaters
- D21H23/36 Knife or blade forming part of the fluid reservoir, e.g. puddle-type trailing blade [**N: or short-dwell coaters**]
- D21H23/38 the fluid material being applied with a special device, e.g. with a roll in a flooded-nip inverted blade coater
- D21H23/40 only one side of the paper being in contact with the material ([D21H23/34](#) takes precedence)
- D21H23/42 Paper being at least partly surrounded by the material on both sides ([D21H23/34](#) takes precedence)
- D21H23/44 Treatment with a gas or vapour
- D21H23/46 Pouring or allowing the fluid to flow in a continuous stream on to the surface, the entire stream being carried away by the paper ([D21H23/66](#) takes precedence)
- D21H23/48 Curtain coaters
- D21H23/50 Spraying or projecting ([D21H23/44](#), [D21H23/66](#) take precedence)
- D21H23/52 by contacting paper with a device carrying the material ([D21H23/32](#), [D21H23/46](#), [D21H23/66](#) take precedence)
- D21H23/54 Rubbing devices, e.g. brush, pad, felt
- D21H23/56 Rolls ([D21H23/38](#) takes precedence)
- D21H23/58 Details thereof, e.g. surface characteristics, peripheral speed
- D21H23/60 the material on the applicator roll being subjected to a particular treatment before applying to the paper ([D21H23/64](#) takes precedence)
- D21H23/62 Reverse roll coating, i.e. applicator roll surface moving in direction opposite to that of the paper
- D21H23/64 the material being non-fluent at the moment of transfer, e.g. in form of preformed, at least partially hardened coating
- D21H23/66 Treating discontinuous paper, e.g. sheets, blanks, rolls
- D21H23/68 whereby the paper moves continuously
- D21H23/70 Multistep processes; Apparatus for adding one or several substances in portions or in various ways to the paper, not covered by another single group of this main group
- D21H23/72 Plural serial stages only
- D21H23/74 Apparatus permitting switching from one technique to another
- D21H23/76 characterised by choice of auxiliary compounds which are added separately from at least one other compound, e.g. to improve the incorporation of the latter or to obtain an enhanced combined effect ([D21H17/18](#), [D21H17/70](#), [D21H23/10](#) take precedence)
- D21H23/76B [**N: Addition of all compounds to the pulp**]
- D21H23/78 Controlling or regulating not limited to any particular process or apparatus
- D21H25/00** **After-treatment of paper not provided for in groups [D21H17/00](#) to [D21H23/00](#)**

Note [C0807]

In this group, it is desirable to classify the individual constituents of the fibres used in the pulp or the paper, the non-fibrous material added to the pulp or the impregnating or coating material, using Combination Sets with symbols chosen from groups [D21H11/00](#) to [D21H21/00](#).

- D21H25/00B . [N: Mechanical treatment ([D21H25/08](#), [D21H25/18](#) take precedence)]
- D21H25/02 . Chemical or biochemical treatment ([D21H25/18](#) takes precedence)
- D21H25/04 . Physical treatment, e.g. heating, irradiating ([D21H25/18](#) takes precedence; dryer section of machines for making continuous webs of paper [D21F5/00](#))
- D21H25/06 . . of impregnated or coated paper ([D21H25/08](#) takes precedence)
- D21H25/08 . Rearranging applied substances, e.g. metering, smoothing; Removing excess material
- D21H25/10 . . with blades
- D21H25/12 . . with an essentially cylindrical body, e.g. roll or rod
- D21H25/14 . . . the body being a casting drum, [N: a heated roll or a calender]
- D21H25/16 . . with a blast of vapour or gas, e.g. air knife
- D21H25/18 . of old paper as in books, documents, e.g. restoring

D21H27/00

Special paper not otherwise provided for, e.g. made by multi-step processes

Notes

This group provides for the classification of paper with special properties or applications which are only partially or not at all provided for elsewhere in the classification. Whenever possible, however, these papers are classified according to the criteria used in the other groups of this subclass.

[N: Notes [C0807]

In this group, it is desirable to classify the individual constituents using Combination Sets with symbols chosen from groups [D21H11/00](#) to [D21H25/00](#).

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- D21H27/00B . [N: Release paper]
- D21H27/00D . [N: Tissue paper; Absorbent paper ([D21H21/22](#), [D21H27/02](#), [D21H27/20](#) take precedence; toilet paper [A47K10/00](#); absorbent pads for physiological fluids [A61L15/16](#); making on paper-making machines [D21F11/00](#))] [N0601] [N: WARNING Not complete. Documents presently classified elsewhere, mainly in [D21F](#) and [D21H](#), need reclassification to this group or its subgroups]
- D21H27/00D2 . . [N: characterised by specific parameters ([D21H27/00D4](#) takes precedence)] [N0601]
- D21H27/00D2B . . . [N: relating to physical or mechanical properties, e.g. tensile strength, stretch, softness] [N0601]
- D21H27/00D2B2 [N: relating to absorbency, e.g. amount or rate of water absorption, optionally in combination with other parameters relating to physical or mechanical properties] [N0601]
- D21H27/00D4 . . [N: characterised by inhomogeneous distribution or incomplete coverage of properties, e.g. obtained by using materials of chemical compounds ([D21H23/02](#),

D21H 23/76, D21H27/02 take precedence)] [N0601]

- D21H27/02 . Patterned paper (patterned coatings [D21H19/66](#); embossing [B31F1/07](#); prepared on the paper-making machines [D21F11/00](#))
 - D21H27/04 . . marbled
 - D21H27/06 . Vegetable or imitation parchment; Glassine paper
 - D21H27/08 . Filter paper (self-supporting filtering material [B01D39/14](#); making on paper-making machines [D21F11/14](#))
 - D21H27/10 . Packing paper (packaging materials of special type or form [B65D65/38](#))
 - D21H27/14 . Paper having stable form or dimension; Curl-resistant paper (anticoil photographic support [G03C1/81](#))
 - D21H27/16 . Pure paper, i.e. paper lacking or having low content of contaminants (after-treatment of cellulose pulp [D21C9/00](#))
 - D21H27/18 . Paper- or board-based structures for surface covering
 - D21H27/20 . . Flexible structures being applied by the user, e.g. wallpaper (printed wallpapers [B41M3/18](#); paperhanging [B44C7/00](#); pregummed wallpaper [C09J7/04](#))
 - D21H27/22 . . Structures being applied on the surface by special manufacturing processes, e.g. in presses
 - D21H27/24 . . . characterised by the surface to be covered being phenolic-resin paper laminates, vulcan fibre or similar cellulosic fibreboards
 - D21H27/26 . . . characterised by the overlay sheet or the top layers of the structures (decorative panels [B44C5/04](#); wood grain effects [B44F9/02](#))
 - D21H27/28 treated to obtain specific resistance properties, e.g. against wear or weather (water-repelling agents [D21H21/16](#))
 - D21H27/30 . Multi-ply (for surface covering [D21H27/18](#); making on paper-making machines [D21F9/00](#), [D21F11/00](#))
- Note**
Layered products classified in this group are also classified in subclass [B32B](#)
- D21H27/32 . . with materials applied between the sheets (attaching together paper or cardboard sheets [B31F5/00](#); adhesives [C09J](#))
 - D21H27/34 . . . Continuous materials, e.g. filaments, sheets, nets
 - D21H27/36 Films made from synthetic macromolecular compounds
 - D21H27/38 . . at least one of the sheets having a fibrous composition differing from that of other sheets
 - D21H27/40 . . at least one of the sheets being non-planar, e.g. crêped (crêping or corrugating paper [B31F](#))
 - D21H27/42 . . comprising dry-laid paper