

## 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**

### Definition statement

*This subclass/group covers:*

Pulp compositions for paper manufacturing, papers obtained therefrom, coated papers and impregnated paper. It also covers the processes for adding materials to pulp or papers and after-treatments of papers as well as special papers.

### Relationship between large subject matter areas

The groups [D21H 11/00](#) and [D21H 13/00](#) relate to the pulp per se (or paper obtained therefrom). The mechanical part of pulp preparation is classified in [D21B](#) or [D21D](#). Chemical processes of pulp preparation are classified in [D21C](#). Chemo-mechanical and thermo-mechanical processes of pulp preparation are classified in [D21B](#).

The main groups [D21H 17/00](#) and [D21H 19/00](#) relate to paper impregnated/coated with a composition of chemical compounds. [D21H 17/00](#) also includes addition of chemicals to the pulp before paper forming. Where said composition of compounds is also claimed per se, subclasses addressing the preparation of said compounds and/or composition per se, in the form of e.g. coatings or adhesives, might become relevant for the classification (see below in details the informative references given for [D21H 17/00](#) and [D21H 19/00](#)).

### References relevant to classification in this subclass

*This subclass/group does not cover:*

|  |                      |
|--|----------------------|
| Coating methods and machines (general)   | <a href="#">B05</a>  |
| Treatment of wood or similar materials   | <a href="#">B27K</a> |
| Manufacture by dry process of articles, with or without organic binding agent, made from particles or fibres of wood or other lingo-cellulosic or like organic materials | <a href="#">B27N</a> |

|   |  |
|---|--|
| Forming of paper tubes or pipes                           | <a href="#">B31C 1/00</a>  |
| Mechanical working or deformation of paper or cardboard   | <a href="#">B31F 1/00</a>  |
| Organic composites (resin + fibres)                       | <a href="#">B32B</a>   |
| Laminates   | <a href="#">B32B</a>   |
| Pulping processes, preparation or after-treatment of pulp | <a href="#">D21B</a> , <a href="#">D21C</a> , <a href="#">D21D</a> |
| Papermaking methods and machines per se                   | <a href="#">D21F</a>   |
| Calenders; accessories for papermaking machines           | <a href="#">D21G</a>   |
| Fibre-board   | <a href="#">D21J</a>   |

### Special rules of classification within this subclass

The main aspect(s) of the invention is/are given a class according to the classification scheme. The invention per se should be classified in the last appropriate class(es). Ideally, one class should be given for covering the main aspect of the invention per se. Exceptionally, the core of the invention may also be classified by using up to three classes.

In this subclass, it is highly desirable to add Indexing Codes for secondary aspects of the invention (e.g. the features of the dependent claims) or for

additional information, which is not considered to form the claimed invention per se, but which might be of interest for the search. For the Indexing Codes the "D" is replaced with an "N", e.g. to classify the additional information that the pulp or paper is treated by enzymes (or micro-organisms) should read [D21H 17/005](#) (instead of [D21H 17/005](#)).

### Glossary of terms

*In this subclass/group, the following terms (or expressions) are used with the meaning indicated:*

In this subclass the following terms (or expressions) are used with the meaning indicated:

|      |  |
|------|--|
| Pulp | a dispersion [N: e.g. an aqueous suspension] 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.   |
| Paper                                | paper, cardboard or wet-laid non-woven. Note also that there is e.g. a class for multi-ply paper comprising dry-laid paper ( <a href="#">D21H 27/42</a> ) and that the paper e.g. can consist of 100% non-cellulosic fibres ( <a href="#">D21H 13/00</a> ). |
| Binder or binding agent              | usually a macromolecular product used to bind the paper-making fibres together in order to give cohesion to the final paper sheet [e.g. starchy materials, latexes, etc.].  |
| Fibres                               | under paper-making fibres are meant short fibres (maximum length in the range of the mm). Papers also comprising long fibres or filaments are classified in <a href="#">D21H 15/00</a> .  |
| Filler or pigment                    | usually designating fine particles added to the pulp (very often inorganic materials such as talc, kaolin, silica, calcium carbonate, etc.).  |
| Sizing agent or hydrophobizing agent | agent added in order to increase the hydrophobicity of the paper  |
| Coating                              | layer of material applied to the paper substrate. Although part of this material may penetrate through the substrate, a coated paper is characterized by the presence of said layer on its surface.   |
| Impregnation                         | application of a liquid material to a paper substrate wherein the liquid material penetrates substantially the substrate [e.g. by submerging the substrate into a bath containing the liquid material].   |

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## Synonyms and Keywords

In patent documents the expression/word "fibres" is often used with the meaning "fibers"

### D21H 1/00

Paper; Cardboard (fibreboard D21J)

### D21H 3/00

Paper or cardboard prepared by adding substances to the pulp or to the formed web on the paper-making machine (processes for adding substances D21D3/00) [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]

### D21H 5/00

Special paper or cardboard not otherwise provided for (duplicating or recording paper B41M)

### D21H 11/00

Pulp or paper, comprising cellulose or lingo-cellulose fibres of natural origin only

## References relevant to classification in this group

*This subclass/group does not cover:*

|   |                            |
|---|----------------------------|
| Pulp or paper containing any kind of synthetic fibres | <a href="#">D21H 13/00</a> |
|---|----------------------------|

## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|                                  |                           |
|----------------------------------|---------------------------|
| Pulp manufacturing               | <a href="#">D21C</a>      |
| Pulp comprising secondary fibres | <a href="#">D21C 5/02</a> |

## D21H 13/00

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

### Relationship between large subject matter areas

Paper comprising synthetic fibres (possibly up to 100% synthetic fibres) may be used for different purposes. Such paper claimed per se is classified in this group.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|  |   |
|--|---|
| Filters, particle separators, etc                          | <a href="#">B01D</a> , <a href="#">B01D 46/00</a>     |
| Glass fibres; manufacture of fibres from mineral materials | <a href="#">C03B 37/00</a>                            |
| Synthetic fibres   | <a href="#">D01D</a> , <a href="#">D01F</a>           |
| Insulating papers; electrical papers                       | <a href="#">H01B 3/52</a>                             |
| Batteries (separators, spacing elements)                   | <a href="#">H01M 2/14</a> , <a href="#">H01M 2/16</a> |

## D21H 15/00

**Pulp or paper, comprising fibers or web-forming material characterized by features other than their chemical constitution**

### Definition statement

*This subclass/group covers:*

Paper comprising long fibres, filaments, flakes or special fibres, being defined by their configuration (geometry, curled fibres, filaments, etc) or by specific properties (e.g. composite fibres).

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|                                  |                            |
|----------------------------------|----------------------------|
| Manufacture/treatment of fibres, | <a href="#">C03B 37/00</a> |
|----------------------------------|----------------------------|

|  |   |
|--|---|
| filaments, flake from glass, mineral or slags    |   |
| Fibres or filament composition                   | <a href="#">C03C 13/00</a>                  |
| Use of fibres or whiskers characterized by shape | <a href="#">C08K 7/02</a>                   |
| Synthetic fibres                                 | <a href="#">D01D</a> , <a href="#">D01F</a> |

## D21H 17/00

**Non-fibrous material added to the pulp, characterized by its constitution; Paper-impregnating material characterized by its constitution**

### Definition statement

*This subclass/group covers:*

Substances added to the pulp or to the paper by impregnation, characterized by their nature. Macromolecular or non-macromolecular compounds, material of vegetable origin, inorganic materials, etc.

In principle substances to be added by coating are to be found in [D21H19](#), unless both groups are possible.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|   |                           |
|---|---------------------------|
| Other metals (beryllium, magnesium, aluminium, calcium, etc.)                           | <a href="#">C01F</a>      |
| Compounds containing metal  | <a href="#">C01G</a>      |
| Polysaccharides; derivatives thereof (preparations of cellulose, starch, amylose, etc.) | <a href="#">C08B</a>      |
| Use of inorganic ingredients  | <a href="#">C08K 3/00</a> |
| Use of prepared ingredients   | <a href="#">C08K 9/00</a> |
| Compositions of macromolecular compounds  | <a href="#">C08L</a>      |

|  |  |
|--|--|
| Inorganic materials                        | <a href="#">C09C</a>   |
| Coating/impregnating compositions per se   | <a href="#">C09D</a>   |
| Inks                                       | <a href="#">C09D 11/00</a>   |
| Micro-organisms or enzymes                 | <a href="#">D21C 5/005</a> , <a href="#">C12N</a> , <a href="#">C12R</a> |
| Particles morphology                       | <a href="#">C01P 2004/00</a>   |
| Physical properties of inorganic compounds | <a href="#">C01P 2006/00</a>   |

## D21H 19/00

**Coated paper; (coated fibreboard D21J1/08); Coating material (recording sheets characterised by the coating used to improve ink, dye or pigment receptivity B41M5/50)**

### Definition statement

*This subclass/group covers:*

This group covers paper which have been coated (i.e. by means of a coated process per se) as well as the coating material per se.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|   |                            |
|---|----------------------------|
| Recording sheets characterised by the coating used to improve ink, dye or pigment receptivity | <a href="#">B41M 5/50</a>  |
| Polysaccharides; derivatives thereof (preparations of cellulose, starch, amylose, etc.)       | <a href="#">C08B</a>       |
| Coating/impregnating compositions per se  | <a href="#">C09D</a>       |
| Compositions of macromolecular compounds  | <a href="#">C08L</a>       |
| Inks  | <a href="#">C09D 11/00</a> |

|                   |                           |
|-------------------|---------------------------|
| Coated fibreboard | <a href="#">D21J 1/08</a> |
|-------------------|---------------------------|

Where the coating is characterized by the filler/pigment used:

|   |                              |
|---|------------------------------|
| Other metals (beryllium, magnesium, aluminium, calcium, etc.) | <a href="#">C01F</a>         |
| Compounds containing metal                                    | <a href="#">C01G</a>         |
| Use of inorganic ingredients                                  | <a href="#">C08K 3/00</a>    |
| Use of prepared ingredients                                   | <a href="#">C08K 9/00</a>    |
| Inorganic materials   | <a href="#">C09C</a>         |
| Particles morphology  | <a href="#">C01P 2004/00</a> |
| Physical properties of inorganic compounds                    | <a href="#">C01P 2006/00</a> |

## **D21H 21/00**

**Non-fibrous material added to the pulp, characterized by its function, form or properties; Paper-impregnating or coating material, characterized by its function, form or properties**

### **Definition statement**

*This subclass/group covers:*

In this group the substances added to the paper are classified according to the function (hydrophobic agents, biocidal agents, ignifugeants, agents improving the absorbency of the formed paper, wet-strength agents, etc.) or specific properties (size, geometry, etc.) of the substance.

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

As to security paper:

|                      |                            |
|----------------------|----------------------------|
| Making microcapsules | <a href="#">B01J 13/00</a> |
| Printing plates      | <a href="#">B41N 1/00</a>  |

|  |  |
|--|--|
| Watermarking   | <a href="#">B41M 3/10</a>                                |
| Security printing  | <a href="#">B41M 3/14</a>                                |
| Banknotes, cheques, shares, bonds:                       | <a href="#">B42D 15/0013</a>                             |
| With moiré effects                                       | <a href="#">B42D 15/002</a>                              |
| With security threads                                    | <a href="#">B42D 15/0026</a>                             |
| Identity card, cheque, etc                               | <a href="#">B42D 15/10</a> , <a href="#">B42D 15/105</a> |
| Watermarking devices                                     | <a href="#">D21F 1/44</a>                                |
| Testing paper currency or valuable paper for genuineness | <a href="#">G04D 7/00</a>                                |

Additives defined by length or shape: see references given in [D21H 15/00](#), [D21H 17/00](#), [D21H 19/00](#) regarding the fillers/pigments or other additional materials

|   |                            |
|---|----------------------------|
| Methods or apparatus for disinfecting or sterilising materials                | <a href="#">A61L 2/00</a>  |
| Fire extinguishing compositions   | <a href="#">A62D 1/00</a>  |
| Organic dyes or closely-related compounds for producing dyes; mordants; lakes | <a href="#">C09B</a>       |
| Treatment of inorganic materials  | <a href="#">C09C</a>       |
| Inks  | <a href="#">C09D 11/00</a> |
| Fire proof paints   | <a href="#">C09D 5/18</a>  |
| Modification of pulp properties   | <a href="#">D21C 9/001</a> |
| Removal of fats, resins, pitch or waxes from the pulp                         | <a href="#">D21C 9/08</a>  |

## D21H 23/00

**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 )**

### Definition statement

*This subclass/group covers:*

Processes for adding a substance to the pulp ([D21H 23/04](#) to [D21H 23/20](#)) or to the formed paper ([D21H 23/22](#) to [D21H 23/74](#)).

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|  |                      |
|--|----------------------|
| General coating processes (i.e. applying liquids or other fluent material to surfaces) | B05                  |
| Papermaking per se: machines and methods   | <a href="#">D21F</a> |
| Calenders and accessories for papermaking  | <a href="#">D21G</a> |

## D21H 25/00

**After-treatment of paper not provided for in groups D21H17/00 to D21H23/00**

### Definition statement

*This subclass/group covers:*

This group is concerned with treatment of the formed/finished paper (e.g. mechanical treatments, chemical treatments, physical treatments, etc.). Coating processes per se do not fall within the scope of this group.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|  |                     |
|--|---------------------|
| General coating processes (i.e. applying liquids or other fluent material to surfaces) | <a href="#">B05</a> |
|--|---------------------|

|   |                      |
|---|----------------------|
| Papermaking per se: machines and methods  | <a href="#">D21F</a> |
| Calenders and accessories for papermaking | <a href="#">D21G</a> |

## D21H 27/00

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

#### Definition statement

*This subclass/group covers:*

Paper materials for a special use (release paper, tissue paper, packing paper, wallpaper, etc.) or having a multi-ply structure.

#### Relationship between large subject matter areas

Layered products per se are classified in the subclass [B32B](#).

#### References relevant to classification in this group

*This subclass/group does not cover:*

|                  |                           |
|------------------|---------------------------|
| Cigarette papers | <a href="#">A24D 1/02</a> |
|------------------|---------------------------|

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

|  |  |
|--|--|
| Medals or badges   | <a href="#">A44C 3/00</a>  |
| Paper filter inlays for filters/strainers for coffee or tea makers | <a href="#">A47J 31/08</a>   |
| Toilet paper; paper towels   | <a href="#">A47K 10/00</a>   |
| Absorbent pads, e.g. sanitary towel, swab or tampon                | <a href="#">A61F 13/15</a> , <a href="#">A61F 13/16</a> , <a href="#">A61L 15/00</a> |
| Cosmetic   | <a href="#">A61L</a>   |
| Filter paper (see also informative ref.)                           | <a href="#">B01D 39/14</a> , <a href="#">D21F 11/14</a>                              |

|   |   |
|---|---|
| given for <a href="#">D21H 13/00</a> ); made on papermaking machine |   |
| Attaching together paper or cardboard sheets                        | <a href="#">B31F 5/00</a>   |
| Layered products comprising a layer of paper                        | <a href="#">B32B 27/10</a>  |
| Printed wallpapers  | <a href="#">B41M 3/18</a>   |
| Sheets temporarily attached together                                | <a href="#">B42F</a>  |
| Decorative sheet/papers   | <a href="#">B44C 5/0469</a>   |
| Paperhanging  | <a href="#">B44C 7/00</a>   |
| Labelling   | <a href="#">B65C</a>  |
| Packing; packaging; containers                                      | <a href="#">B65D</a>  |
| Paper support for adhesive film / pre-gummed wallpaper              | <a href="#">C09J 7/04</a>   |
| By adhesive means   | <a href="#">B31F 5/06</a>   |
| Embossed/patterned papers:  |   |
| On the papermaking machine  | <a href="#">D21F 11/006</a>   |
| Embossing   | <a href="#">B31F 1/07</a>   |
| Creping   | <a href="#">B31F 1/12</a> , <a href="#">B31F 1/16</a> , <a href="#">B31F 1/18</a> |
| Non-woven   | <a href="#">D04H</a>  |
| Multi-ply papers made on papermaking machines                       | <a href="#">D21F 9/006</a>  |
| Anti-coil photographic support                                      | <a href="#">G03C 1/81</a>   |
| Labels, tag ticket  | <a href="#">G09F 3/00</a>   |

