

B27K

PROCESSES, APPARATUS OR SELECTION OF SUBSTANCES FOR IMPREGNATING, STAINING, DYEING, BLEACHING OF WOOD OR SIMILAR MATERIALS, OR TREATING OF WOOD OR SIMILAR MATERIALS WITH PERMEANT LIQUIDS, NOT OTHERWISE PROVIDED FOR; CHEMICAL OR PHYSICAL TREATMENT OF CORK, CANE, REED, STRAW OR SIMILAR MATERIALS

Definition statement

This subclass/group covers:

Methods and apparatus for the following treatments of wood:

- Dampening;
- Impregnating;
- Staining;
- Dyeing;
- Bleaching;
- Softening;
- Hardening; and
- other methods and apparatus for treating of wood with permeant liquids, unless provided for in other subclasses.

Methods and apparatus for bleaching or impregnating wood in combination with drying;

Methods and apparatus for chemical or physical treatment of cork;

Methods and apparatus for chemical or physical treatment of cane, reed, straw, bamboo or similar fibrous material of plant origin;

Selection (i.e. use) of chemical substances for the treatments covered by this subclass, unless provided for in other subclasses.

Relationship between large subject matter areas

This subclass covers the selection of chemical substances, i.e. the use thereof, for the treatments covered by the subclass. Substances or compositions per-se are not covered by this subclass.

The structure or composition of the chemical substances selected is covered by pure chemistry classes C01, C07, or C08. Special activities or special

properties of the chemical substances selected are covered in places for these activities or properties, for example in [A01N](#) (biocides), [A62D 1/00](#) (fire extinguishing compositions), [C09B](#) (dyes), [C09D](#) (stains) or [C09K](#) (anti-oxidant compositions or fireproofing materials).

References relevant to classification in this subclass

This subclass/group does not cover:

| | |
|--|----------------------------|
| Biocidal compositions | A01N |
| Fire-extinguishing compositions | A62D 1/00 |
| Coating wood | B05D 7/06 |
| Planing, drilling, milling, or turning wood | B27C |
| Mechanical working of veneer or plywood | B27D |
| Applying adhesives or glue to surfaces of wood to be joined | B27G 11/00 |
| Bending wood | B27H 1/00 |
| Mechanical working of cane, cork, or of tree or plant material not otherwise provided for | B27J |
| Debarking, splitting wood, manufacture of veneer, wooden sticks, wood shavings, chips, powder, or the like | B27L |
| Compressing, punching out, burning or charring wood | B27M 1/00 |
| Manufacture or reconditioning of specific semi-finished or finished wood articles | B27M 3/00 |
| Manufacture of articles made by dry processes from particles or fibres consisting of wood or other lignocellulosic or like organic material; after-treatment of these articles | B27N |

| | |
|---|----------------------------|
| Impregnation of stoppers for bottles, jars, or similar containers | B67B 1/03 |
| Impregnation of matches | C06F |
| Water repellent compositions of oils, fats or waxes or of derivatives thereof | C08L 91/00 |
| Woodstains | C09D 15/00 |
| Drying-oils, siccatives | C09F |
| Fireproofing materials | C09K 21/00 |
| Paper-pulp impregnation | D21H |
| Impregnation and after-treatment of fibreboard manufactured by wet processes | D21J |
| Protection of building elements, e.g. against pests or fire | E04B 1/62 |
| Drying solid materials | F26B |
| Treatment of materials for manufacturing musical instruments | G10D |

Informative references

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

| | |
|---|----------------------------|
| Apparatus for applying liquids or other fluent materials to surfaces | B05C |
| Multilayer materials (essentially comprising wood B32B 21/00 ; impregnation, colouring B32B 38/00) | B32B |
| Artistic painting or surface treatment | B44D |
| Compositions inhibiting chemical change, e.g. of antioxidants | C09K 15/00 |

| | |
|---------------------------------------|----------------------------|
| Building materials, also made of wood | E04C 2/00 |
| Roof coverings, also made of wood | E04D |
| Flooring made of wood | E04F 15/04 |

Glossary of terms

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

| | |
|-------------------|---|
| Dampening | Treating wood for increasing its water content (e.g. by steaming) |
| Dyeing | Treating a material with a soluble colouring substance that has an affinity to the material to which it is applied (as opposed to colouring with a pigment, which is usually insoluble) |
| Impregnation | Incorporation of a substance into the pores of a material by absorption, adsorption or penetration |
| OSB | Oriented strand board |
| Staining | Treating a surface with a paint that is formulated to transport the pigment into the pores of the surface, rather than creating a film on top of the surface |
| Thermal treatment | Treatment of wood at temperatures well over 100°C allowing for the modification of its chemical structure |
| Wood | Natural whole wood, or wood-based products other than those made from fibres or particles, for example plywood or laminated veneer lumber |

B27K 1/00

Damping wood

Definition statement

This subclass/group covers:

Methods and apparatus for increasing the water content of the wood. The main purpose of such treatments is to prevent cracking of wood by overdrying.

Relationship between large subject matter areas

Steam drying of wood is covered by [B26F](#).

Glossary of terms

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

| | |
|----------------------|-------------------------|
| Dampening or damping | Humidifying, moistening |
|----------------------|-------------------------|

B27K 3/00

Impregnating wood, [N: e.g. impregnation pretreatment, for example puncturing; Wood impregnation aids not directly involved in the impregnation process] (dyeing, staining B27K5/00)

Definition statement

This subclass/group covers:

Methods and apparatus for impregnating wood and for pre- and after-treatments related to wood impregnation.

References relevant to classification in this group

This subclass/group does not cover:

| | |
|--|---------------------------|
| Biocides, Pest repellants | A01N |
| Fire-extinguishing compositions | A62D 1/00 |
| Coating wood | B05D 7/06 |
| Manufacture of articles made by dry processes from particles or fibres consisting of wood or other lignocellulosic or like organic material; after-treatment of these articles | B27N |

| | |
|---|----------------------------|
| Impregnation of stoppers for bottles, jars, or similar containers | B67B 1/03 |
| Impregnation of matches | C06F |
| Water repellent compositions of oils, fats or waxes or of derivatives thereof | C08L 91/00 |
| Woodstains | C09D 15/00 |
| Drying-oils | C09F 5/00 |
| Siccatives | C09F 9/00 |
| Fireproofing materials | C09K 21/00 |
| Paper-pulp impregnation | D21H |
| Impregnation and after-treatment of fibreboard manufactured by wet processes | D21J |
| Protection of building elements, e.g. against pests or fire | E04B 1/62 |
| Treatment of materials for manufacturing musical instruments | G10D |

Glossary of terms

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

| | |
|------------------|--|
| Active component | A component of an impregnation mixture which is essential for the purpose of the impregnation. Solvents, surfactants, thickeners, and the like are normally not falling within this definition |
|------------------|--|

B27K 3/002

[N: employing compositions comprising micro-organisms]

Relationship between large subject matter areas

Compositions employing micro-organisms are covered by [C12N](#). Processes using micro-organisms in general are covered by [C12R](#), apparatus thereof by [C12M](#), measuring and testing by [C12Q](#).

B27K 3/005

[N: employing compositions comprising microparticles]

Relationship between large subject matter areas

Biocidal compositions characterised by their form are covered by [A01N 25/00](#).

Glossary of terms

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

| | |
|----------------|--|
| Microparticles | Particles with diameters between 0.1-100 microns |
|----------------|--|

B27K 3/007

[N: employing compositions comprising nanoparticles]

Relationship between large subject matter areas

Biocidal compositions characterised by their form are covered by [A01N 25/00](#).

Glossary of terms

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

| | |
|---------------|---|
| Nanoparticles | particles with diameters between 1-100 nm |
|---------------|---|

B27K 3/0221

[N: Pore opening (B27K3/0214 takes precedence)]

Definition statement

This subclass/group covers:

Pre-treatments aimed to open the wood pores, excepting drying.

B27K 3/0242

[N: using melt impregnation]

Definition statement

This subclass/group covers:

Impregnation processes employing melted solids.

B27K 3/0264

[N: using staples or nails]

Definition statement

This subclass/group covers:

Impregnation processes employing staples or nails made of materials with biocidal properties.

B27K 3/0271

[N: Vapour phase impregnation]

Definition statement

This subclass/group covers:

Impregnation processes employing biocides in vapour phase.

B27K 3/0292

[N: for improving fixation (B27K3/0285 takes precedence)]

Special rules of classification within this subgroup

Polymer impregnation for improving the fixation of an impregnation agent should be not classified here, but only in [B27K 3/15](#) and/or its subgroups.

B27K 3/083

[N: along the fibers, i.e. longitudinal impregnation]

Definition statement

This subclass/group covers:

Impregnation processes employing a pressure gradient along the wood fibres.

B27K 3/14

Bandage methods

Definition statement

This subclass/group covers:

Impregnation processes employing a bandage for storing and releasing the impregnation agent.

B27K 3/15

Impregnating involving polymerisation [N: including use of polymer-containing impregnating agents (macromolecular compounds derived from lignocellulosic materials C08H; compositions of lignin-containing materials C08L97/02)]

Definition statement

This subclass/group covers:

Impregnation processes involving the use of polymerized or polycondensed substances.

Relationship between large subject matter areas

Macromolecular compounds derived from lignocellulosic materials are covered by [C08H](#). Compositions of lignocellulosic containing materials are covered by [C08L 97/02](#).

Special rules of classification within this group

The documents of this head group are classified additionally in [M08L](#) and [M08K](#) for information regarding the chemical nature of the polymer composition employed in impregnation.

B27K 3/153

[N: Without in-situ polymerisation, condensation, or cross-linking reactions]

Definition statement

This subclass/group covers:

Impregnation processes involving substances polymerized or polycondensed before impregnation.

Special rules of classification within this subgroup

The documents of this subgroup are classified additionally in [M08L](#) and [M08K](#) for information regarding the chemical nature of the polymer composition employed in impregnation.

B27K 3/156

[N: Combined with grafting onto wood fibres]

Definition statement

This subclass/group covers:

Impregnation processes involving the use of polymerized or polycondensed substances which react with the chemical structure of wood.

Special rules of classification within this subgroup

The documents of this subgroup are classified additionally in [M08L](#) and [M08K](#) for information regarding the chemical nature of the polymer composition employed in impregnation.

B27K 3/16

Inorganic impregnating agents

Relationship between large subject matter areas

Inorganic biocidal compositions are covered by [A01N](#).

Special rules of classification within this group

This head group covers impregnation processes involving the use of inorganic substances either not covered by the subgroups [B27K 3/163](#) to [B27K 3/32](#), or when their chemical nature is not especially relevant.

This head group and its subgroups [B27K 3/163](#) to [B27K 3/30](#) refer only to the active components of the impregnation mixtures.

B27K 3/32

Mixtures of different inorganic impregnating agents

Special rules of classification within this group

This subgroup covers impregnation processes characterized by the presence of a synergistic effect caused by at least two active inorganic components. The active inorganic components should be classified in their specific subgroups [B27K 3/163](#) to [B27K 3/30](#), too.

B27K 3/34

Organic impregnating agents [N: (polymers B27K3/15)]

Relationship between large subject matter areas

Organic biocidal compositions are covered by [A01N](#).

Special rules of classification within this group

This head group covers impregnation processes involving the use of organic substances either not covered by the subgroups [B27K 3/343](#) to [B27K 3/48](#), or when their chemical nature is not especially relevant.

This head group and its subgroups [B27K 3/343](#) to [B27K 3/48](#) refer only to the active components of the impregnation mixtures.

B27K 3/346

[N: Grafting onto wood fibres (B27K3/156 takes precedence; macromolecular compounds derived from lignocellulosic materials C08H)]

Definition statement

This subclass/group covers:

Impregnation processes involving the use of organic substances which react with the chemical structure of wood.

B27K 3/50

Mixtures of different organic impregnating agents

Special rules of classification within this group

This subgroup covers impregnation processes characterized by the presence of a synergistic effect caused by at least two active organic components. The active organic components should be classified in their specific subgroups [B27K 3/343](#) to [B27K 3/48](#), too.

B27K 3/52

Impregnating agents containing mixtures of inorganic and organic compounds

Special rules of classification within this group

This subgroup covers impregnation processes characterized by the presence

of a synergistic effect caused by at least one inorganic and at least one organic component. The active components should be classified in their specific subgroups [B27K 3/163](#) to [B27K 3/30](#) and [B27K 3/343](#) to [B27K 3/48](#), respectively, too.

B27K 5/00

Treating of wood not provided for in groups B27K1/00, B27K3/00

References relevant to classification in this group

This subclass/group does not cover:

| | |
|--|----------------------------|
| Coating wood | B05D 7/06 |
| Planing, drilling, milling, or turning wood | B27C |
| Mechanical working of veneer or plywood | B27D |
| Applying adhesives or glue to surfaces of wood to be joined | B27G 11/00 |
| Bending wood | B27H 1/00 |
| Mechanical working of cane, cork, or of tree or plant material not otherwise provided for | B27J |
| Debarking, splitting wood, manufacture of veneer, wooden sticks, wood shavings, chips, powder, or the like | B27L |
| Compressing, punching out, burning or charring wood | B27M 1/00 |
| Manufacture or reconditioning of specific semi-finished or finished wood articles | B27M 3/00 |
| Manufacture of articles made by dry processes from particles or fibres consisting of wood or other lignocellulosic or like organic material; after-treatment of these articles | B27N |

| | |
|--|----------------------------|
| Woodstains | C09D 15/00 |
| Drying solid materials | F26B |
| Treatment of materials for manufacturing musical instruments | G10D |

B27K 5/04

Combined bleaching or impregnating and drying of wood

Special rules of classification within this group

Pre-drying before impregnation is covered by [B27K 3/0214](#). The polymerizing, condensation, or cross-linking of the impregnating compositions comprising monomers or polymers is normally not covered by this group.

B27K 5/06

Softening or hardening of wood

Special rules of classification within this group

Processes inherently leading to softening or hardening, like dampening, polymer impregnation, or thermal treatment are classified here only in connection with a special effect.

B27K 7/00

Chemical or physical treatment of cork (mechanical working of cork B27J5/00)

References relevant to classification in this group

This subclass/group does not cover:

| | |
|---|---------------------------|
| Mechanical working of cane, cork, or of tree or plant material not otherwise provided for | B27J |
| Impregnation of stoppers for bottles, jars, or similar containers | B67B 1/03 |
| Drying solid materials | F26B |

Special rules of classification within this group

Documents of this head group may be classified in [B27K 1/00-B27K 5/06](#) for additional information.

B27K 9/00

Chemical or physical treatment of reed, straw, or similar material (mechanical working of cane or the like B27J1/00)

References relevant to classification in this group

This subclass/group does not cover:

| | |
|---|---------------------------|
| Mechanical working of cane, cork, or of tree or plant material not otherwise provided for | B27J |
| Protection of building elements, e.g. against pests or fire | E04B 1/62 |
| Drying solid materials | F26B |

Special rules of classification within this group

Documents of this head group may be classified in [B27K 1/00-B27K 5/06](#) for additional information.