

Title (en)

Method for manufacturing wood fibre substances and wood fibre substances with lower emissions of volatile VOC

Title (de)

Verfahren zur Herstellung von Holzfaserverwerkstoffen sowie Holzfaserverwerkstoffe mit verringerter Emission an flüchtigen VOC

Title (fr)

Procédé de fabrication de matières premières en fibres de bois et matières premières en fibres de bois ayant des émissions réduites en VOC volatiles

Publication

EP 2181818 A3 20120822 (DE)

Application

EP 09174396 A 20091028

Priority

DE 102008056280 A 20081028

Abstract (en)

[origin: EP2181818A2] Producing wood fiber materials with reduced emission of volatile organic compounds comprises chopping wood, cleaning, plasticizing the chopped wood under pressure and temperature and fraying in a refiner and coating and pressing wood fibers, where unchopped and/or chopped wood is contacted with a formulation containing a compound for adjusting neutral to alkaline pH value comprising e.g. alkali- and alkaline earth-carbonates, and a complexing agent comprising e.g. polyvalent and polyfunctional carboxylic acids aminomethyl carboxylic acids and aminomethyl phosphonic acids. Producing wood fiber materials with reduced emission of volatile organic compounds comprises chopping wood, cleaning, plasticizing the chopped wood under pressure and temperature and fraying in a refiner and coating and pressing wood fibers, where unchopped and/or chopped wood is contacted with a formulation containing at least a compound for adjusting neutral to alkaline pH value comprising alkali- and alkaline earth-carbonates, -phosphates, -dihydrogen phosphates, -hydrogen phosphates, -oxides, -hydroxides, or -silicates, and at least a complexing agent comprising polyvalent and polyfunctional carboxylic acids, aminomethyl carboxylic acids, aminomethyl phosphonic acids, ethylenediaminetetraacetic acid, diethylene triamine pentaacetic acid, ethylene glycol tetraacetic acid, ethylenediamine-N,N'-disuccinic acid or its salts, polyphenols, tannins, amino acids, peptides, proteins, polycarboxylates, phosphates, polyphosphates, phosphonic acids, polyphosphonates, or phosphated, phosphonylated, sulfated or sulfonated polymers. An independent claim is included for a wood fiber material made of plasticized fatty acid ester containing wood or wood particles, where: the wood fiber material exhibits no off-odor caused by furfural and degradation products of fatty acid esters and fatty acids, such as propanal, hexanal, nonanal, 2-octenal, 2-heptenal, 2-decenal, octanal, propionic acid, butyric acid or hexanoic acid; the wood fiber material, after 28 days test period under committee for the health-related evaluation of building products- or Natureplus(RTM: Eco-friendly volatile organic compound-free inks support for protecting nature, earth and health)-test conditions, no unsaturated aldehydes from the reduction of fatty acid esters and fatty acids at a concentration of greater than 5 $\mu\text{g}/\text{m}^3$, and no furfural at a concentration of greater than 10 $\mu\text{g}/\text{m}^3$ are emitted and exhibits total emission of aldehydes, which lies at below 20 $\mu\text{g}/\text{m}^3$; and the wood fiber material contains a complexing agent at a concentration of at least 0.1 mg/g .

IPC 8 full level

B27N 1/00 (2006.01)

CPC (source: EP)

B27N 1/003 (2013.01)

Citation (search report)

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- [Y] EP 0594038 A1 19940427 - BASF AG [DE]
- [A] WO 2004085125 A2 20041007 - AKZO NOBEL COATINGS INT BV [NL], et al
- [A] US 2006186233 A1 20060824 - HOLM ANDREAS [DE], et al
- [A] WO 03000475 A1 20030103 - FLETCHER BUILDING PRODUCTS LTD [NZ], et al

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