

Title (en)  
Method for chromophoric illustration of surfaces

Title (de)  
Verfahren zur farbgebenden Beschriftung von Oberflächen

Title (fr)  
Procédé de marquage coloré de surfaces

Publication  
**EP 2199094 A1 20100623 (DE)**

Application  
**EP 08022228 A 20081222**

Priority  
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Abstract (en)

The process for reactive ink-jet printing on substrate such as paper, cardboard, corrugated cardboard, film, inject- or pressure poured plastic part, metal, ceramic surface, lacquer layer or corrosion protective layer, comprises coating the substrate with di- and tri-hydroxy phenols or carboxylated, sulfonated or phosphorylated phenol or its derivatives or its mixture and applying a reactive ink consisting of soluble metal salt through ink-jet printing on or in the surface of the substrate for reaction to form a stable, document-genuine color complex recognizable for the human eye. The process for reactive ink-jet printing on substrate such as paper, cardboard, corrugated cardboard, film, inject- or pressure poured plastic part, metal, ceramic surface, lacquer layer or corrosion protective layer, comprises coating the substrate with di- and tri-hydroxy phenols or carboxylated, sulfonated or phosphorylated phenol or its derivatives or its mixture and applying a reactive ink consisting of soluble metal salt through ink-jet printing on or in the surface of the substrate for reaction to form a stable, document-genuine color complex recognizable for the human eye. Ink-jet-printer with drop-on-demand- or continuous ink-jet-process is used as pressure system. The variation of the construction recognizable for the human eye is fixed through thermal or electromagnetic radiation, a chemical agent or through mechanical treatment. The color variation is carried out through generation of chromophore metal compounds. The color variation is carried out through a chemical reaction of iron salt solution with gallic acid or gallic acid ester-coated materials on the paper and/or cellulose base, or through chemical reaction of polyphenol or carboxylated phenol or natural tannin extracts are used. The application of reactive layer is carried out through pressure-, lacquer- or paper technique process such as knife coating, spraying, dip coating or printing process such as flexo-, offset-, sieve-, digital printing, curtain coating or roller application process with roller- direction or counter-direction. Aqueous or organic solution of polyphenol or carboxylated phenol is used as ink jet ink and the reactive metal salt is applied as coating. The color is visible after the reaction imprinting. Black, blue, yellow, brown and reddish colors are produced dependent on the polyphenol. Yellow and brown colors are produced by molybdate and tungstate dependent on the polyphenol, and yellow colors are produced by titanate. The iron salt solution has a pH value of 8-6 and consists of a weakly coordinating additive. Independent claims are included for: (1) a coated product; and (2) a writing system for labeling of coated surface.

Abstract (de)

Die Erfindung betrifft ein reaktives Tintenstrahldruckverfahren zur Durchführung auf Substraten wie Papier, Pappe, Wellkartons, Folien, spritz- oder druckgegossenen Kunststoffteile, Metall, keramischen Oberflächen, Lackschichten oder Korrosionsschutzschichten, dadurch gekennzeichnet, dass die Substrate mit einem Polyphenol beschichtet werden, und eine reaktive Tinte bestehend aus zumindest einem gelösten Metallsalz gewählt aus der Gruppe der Verbindungen von Eisen, Molybdän, Wolfram und Titan durch Tintenstrahldruck an oder in der Oberfläche der genannten Substrate zur Reaktion gebracht wird, wodurch ein stabiler für das menschliche Auge sofort erkennbarer Farbkomplex gebildet wird, sowie geeignete beschichtete Materialien und ein Schreibsystem zur Durchführung des Verfahrens.

IPC 8 full level  
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CPC (source: EP)  
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