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(54) **Lightfastness improvements of inkjet print media through the addition of photoinitiators**

Lichtfestigkeitverbesserung von Tintenstrahlaufzeichnungsmedien durch den Zusatz von Fotoinitiatoren

Amélioration de la stabilité à la lumière de média pour le jet d'encre par addition de photoinitiateurs

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Description

TECHNICAL FIELD

[0001] The present invention is directed generally to improving lightfastness of ink for inkjet printing, and, more particularly, to coated print media including at least an ink-receptive layer containing a photoinitiator to improve the lightfastness of the ink.

BACKGROUND ART

[0002] The lightfastness (LF) and permanence of inkjet prints continues to gain visibility in the press. Huge advances have been made in this area through the implementation of pigmented inks. Pigments provide unparalleled permanence ranging from 10 to 200 years before objectionable change. However, a substantial fraction of commercial inkjet products, such as small format color prints, still use dye-based technology. The challenge is to maximize the lightfastness of the next generation of dye-based inkjet printers.

[0003] Various approaches have been undertaken to modify the inkjet ink composition to improve its lightfastness. However, an improvement in lightfastness can often result in a degradation of some other property, for example, chroma.

[0004] Inkjet dyes can degrade by many mechanisms once dried in an inkjet receptive coating. UV radiation may enter the coating, strike a dye molecule and cleave a bond in the chromophore, thus changing/eliminating its color characteristics. Free radical formation has proven to be another enemy of dyes. Any quasi-stable mobile formation has proven to be another enemy of dyes. Any quasi-stable mobile formation has proven to be another enemy of dyes. Any quasi-stable mobile electrons in a coating could attack the chromophore and result in its demise. Thermal and chemical degradation could also reduce the dye's ability to absorb and reflect at the desired wavelength. Finally, oxygen may diffuse freely into our coatings, be struck by UV radiation, and form singlet oxygen. This singlet oxygen acts much like a free radical in that it catalyzes the degradation of dyes. Without subscribing to any particular theory, it appears that the most probable mechanism for the photoinitiator LF improvement stems from the reduction in singlet oxygen formation. In such a case, the UV radiation that would normally form singlet oxygen is preferentially absorbed by the initiator that then crosslinks the polymers used in the media coating, e.g., polyethylene oxide.

[0005] WO 99/42296 discloses coatable, UV or visible light-photopolymerisable compositions comprising a curable matrix containing at least one reactive monomer and at least one ink-receptive polymer capable of dissolving therein, and from 0.1 to 10 parts photoinitiator per 100 parts curable matrix.

[0006] US 5,948,150 discloses a composition for use as an additive in an ink composition, said additive comprising at least one ultraviolet absorber, at least one free radical initiator, at least one antioxidant, and at least one liquid carrier.

[0007] WO 01/10640 discloses a support for an ink jet recording material, said support comprising a substrate and a UV cured resinous coating layer on the substrate, with said resinous coating layer comprising a tetrafunctional polyester acrylate, a difunctional acrylic ester, a UV photoinitiator and a polyether.

[0008] JP 2000062310A discloses a coating composition for an ink jet recording paper, said composition comprising an ultraviolet absorber and a hindered amine compound.

[0009] JP 08218017A discloses an ink comprising a water-insoluble monomer, a solvent capable of dissolving the water-insoluble monomer, water, a recording agent and a photoinitiator.

[0010] JP 60259487A discloses a recording material having an ink accepting layer on a transparent base material. The recording material contains a UV absorbent.

[0011] Thus, there remains a need for a system that improves the lightfastness of dye-based colorants printed on inkjet print media, particularly on glossy print media.

DISCLOSURE OF INVENTION

[0012] In accordance with the present invention, a small amount of photoinitiator consisting essentially of α,α-dimethyl-α-hydroxy acetophenone, in a coating on glossy print media tends to improve lightfastness by about 5 to 20%. The photoinitiator is included in the coating in the range of 0.001 to 0.01 wt%, resulting in a concentration after drying the coating of 0.008 to 0.08 wt%, based on a total solids content of 12 wt% in the coating composition prior to applying and drying it on the print media.

[0013] Specifically, a print medium is provided having at least one coating thereon, including an inkjet receptive coating. At least the inkjet receptive coating contains the photoinitiator consisting essentially of α,α-dimethyl-α-hydroxy acetophenone in the range of 0.001 to 0.01 wt%.

[0014] Also in accordance with the present invention, a method is provided for improving lightfastness in coated print media provided with the inkjet receptive coating. The method comprises:

(a) formulating at least one coating so as to contain a photoinitiator, at least one said coating comprising said inkjet receptive coating; and

(b) coating said print media with said at least one coating, said coated print media adapted to receive at least one inkjet ink thereon;

characterised in that the photoinitiator consists essentially of α,α-dimethyl-α-hydroxy acetophenone and wherein at least said inkjet receptive coating is formulated to contain from 0.001 to 0.01 wt% of said photoinitiator.

[0015] The magnitude of the lightfastness improvement has varied by formulation, but there is always some improvement over the same system without the photoinitiator.

BEST MODES FOR CARRYING OUT THE INVENTION

[0016] Reference is made now in detail to a specific embodiment of the present invention, which illustrates the best mode presently contemplated by the inventor for practicing the invention. Alternative embodiments are also briefly described as applicable.

[0017] U.S. Patent 5,880,196, entitled "Inkjet Printing Media" and issued to Suk H. Cho et al on March 9, 1999, and assigned on its face to PPG Industries, Inc., discloses and claims a coating composition for inkjet printing media. The coating comprises (a) a binder comprising (1) an organic polymer which is substantially free of onium groups and (2) an onium addition polymer consisting essentially of onium-containing mer units derived from addition monomer and onium-free mer units derived from addition monomer of which from 20 to 100 wt% is hydrophobic addition monomer, wherein the binder constitutes from 20 to 90 wt% of the coating; and (b) finely divided substantially water-insoluble pseudoboehmite particles which have a maximum dimension of less than 500 nm, are distributed throughout the binder, and constitute from 10 to 80 wt% of the coating. The coating, also referred to as an inkjet receptive coating herein, is formed on a backing substrate, which can comprise a porous or non-porous substrate, which is transparent or opaque or intermediate therebetween. An example of a suitable substrate is of a photobase construction, comprising a paper base with a polyethylene film molten-extruded thereon.

[0018] The '196 patent is one example of a coating composition for inkjet printing media. Another example is disclosed and claimed in application Serial No. 09/491,642. filed January 27, 2000. In the '642 application, a process is provided that allows the production of multi-layer coatings in which one or more topcoats can be applied to a porous basecoat to produce a uniform and defect-free coating layer. Specifically, a process is provided in which a liquid (called a "re-wetting" liquid) is applied to the basecoat prior to topcoating such that the air in the basecoat is removed prior to topcoating. This process can occur in-line with a simple apparatus as described therein. An added benefit of this method is that it also allows the possibility of adding functionality or performing chemistry to a basecoat after the basecoat is dried and before the topcoat is applied in a single process. For example, the wetting liquid may contain, but is not limited to, surfactants, pH modifiers, polymers, crosslinkers, pigments, and/or dye stabilizers. Advantages over what has been done before include the use of re-wetting process that allows a topcoat to be applied to a porous basecoat that is coated on a non-porous substrate such that bubbles are not formed in the topcoat. In addition, there is added flexibility of incorporating functionality or chemistry in the re-wetting process. Finally, the process is simple to implement and is compatible with many general coating methods, such as slotdie coating, rod coating, blade coating, gravure coating, knife-over-roll coating, or the like.

[0019] The foregoing teachings are merely exemplary of ink-receptive coatings applied to print media, and are suitably modified by the teachings herein to provide inkjet printed ink with improved lightfastness. Other ink-receptive coatings may be similarly modified according to the teachings herein to provide inkjet printed ink with improved lightfastness.

[0020] The above-discussed two references each disclose a different coating system on similar, but different substrates. Both employ photobases from the same supplier that differ primarily in caliper. The coating system disclosed in the '196 patent has also been applied to plain paper.

[0021] In accordance with the present invention, the coating composition is modified to include the photoinitiator in the amount of 0.001 to 0.01 wt% in the formulation used to apply the coating. In particular, the coating composition that is so modified is the final coating, e.g., topcoat or ink-receptive layer, that is formed on the print medium. However, this assumes that the topcoat is, in fact, the ink-receptive layer. If multiple coatings (two or more coatings) are employed, and a lower coating is the ink-receptive layer, then the photoinitiator is preferably included in that lower coating. However, in general, in a situation in which such multiple coatings are employed, the printed ink is often distributed to some extent over other layers in addition to that layer which is designated the ink-receptive layer. Thus, it may simply be expedient to include the photoinitiator in all such coatings.

[0022] As an example only, the following process is described, based on the above-referenced application Serial No. 09/491,642. Variants of the process described below or in the above-referenced U.S. Patent 5,880,196 may be employed.

[0023] In the process described in the 642 application, a basecoat is first applied onto the print medium, e.g., paper, followed by application of a topcoat. The basecoat and the topcoat each comprise one or more pigments and one or more binders, which are polymeric compounds soluble or dispersible in the solvent in which the basecoat and topcoat are applied to the substrate. Examples of pigments include silica and alumina and its various hydrates, titania, carbonates (e.g., calcium carbonate, magnesium carbonate), glass beads, and organic pigments (e.g., plastic or polymer pigments such as crosslinked SBR latexes, micronized polyethylene or polypropylene wax, acrylic beads, and methacrylic beads). The pigment may be the same in both the basecoat and topcoat or different.

[0024] The binder is a polymeric matrix which serves, among other things, to hold the pigment(s) in place. The binder can be water-soluble or water-dispersible. Examples of water-soluble binders include polyvinyl alcohol and its derivatives, polyvinyl pyrrolidone/polyvinyl acetate copolymer, cellulose derivatives, polyamides, and polyethylene oxide. Examples of water-dispersed binders include styrene-butadiene latexes, polyacrylics, polyurethanes, and the like. The binder may be the same in both the basecoat and topcoat or different.

[0025] The basecoat and topcoat are separately applied in solution to the substrate and allowed to dry.

[0026] The substrate comprises non-permeable (non-air permeable) material, such as a film-based material, e.g., Mylar, or a resin-coated papers (e.g., photobase paper).

[0027] In the '642 application, pores in the basecoat are saturated, or nearly saturated, with a liquid, also called a re-wetting solution therein, before the topcoat solution is applied. Preferably, the pores in the basecoat are saturated with liquid before the topcoat solution is applied. Also preferably, a solvent that is compatible with the solvent in the topcoating is believed to give the best adhesion between coating layers.

[0028] The liquid may comprise one or more solvents. The liquid may be heated or chemically modified to increase the penetration rate in the precoat.

[0029] If heated, the liquid is heated to any temperature below its boiling point (or the minimum boiling point if two or more solvents are used).

[0030] By "chemically modified" is meant the addition of one or more surfactants, adhesion promoters, pH modifiers, polymers, crosslinkers, pigments, and/or dye stabilizers to the liquid. The chemically modified re-wet solution thus serves to modify the properties of the basecoat, topcoat, the coating process, or the performance of the coatings as it relates to its use as a printing media. Any of the usual surfactants, pH modifiers, and/or crosslinkers may be used in the practice of the present invention. For example, where the binder in the basecoat is polyvinyl alcohol, a suitable crosslinker added to the liquid is a borate or glyoxyl. This process is especially useful for chemistries that are not compatible with the coating fluids or process.

[0031] It is also preferred that excess fluid on the surface of the basecoat be removed before topcoating. This can be accomplished by a nip, doctoring blade, or the like. Alternatively, the re-wet solution can be metered by a pump directly onto the basecoat, thus eliminating the need for doctoring

[0032] The topcoat is then applied to the re-wet basecoat. Ordinarily, the topcoat is considered to be the ink-receptive layer, as discussed above.

[0033] In these types of coatings, the solids content is on the order of 12 wt%, although this may be varied, depending on the particular application of the coated print medium.

[0034] In accordance with the present invention, a small amount of the photoinitiator is included in the composition of at least the ink-receptive coating, as discussed above. As used herein, the term "topcoat" refers to the final coating formed on the print medium, and could comprise a single coating, the upper coating of a dual coating system, as described above, or other combinations of coatings. In any event, the photoinitiator is included in at least the ink-receptive layer formed on the print medium.

[0035] The photoinitiator employed in the practice of the present invention is α,α-dimethyl-α-hydroxy acetophenone (2-hydroxy-2-methyl-1-phenyl-propan-1-one), which is available from Ciba Co. under the trade mark Darocur® 1173.

[0036] The concentration of the photoinitiator in the coating applied to the base substrate, or print medium, is in the range of 0.001 to 0.01 wt%, preferably about 0.005 wt%, based on the total coating composition. In general, a higher concentration does not provide any improvement, and, in fact, results in lightfastness that is only marginally improved over an absence of the photoinitiator. On the other hand, at least some photoinitiator is required in order to realize the benefits of the present invention.

[0037] Based on a solids content in the coating of 12 wt%, then the final composition of photoinitiator in the coating after drying is in the range of 0.008 to 0.08 wt%, and preferably about 0.042 wt%. A change in the solids content would, of course, result in a corresponding change in the final composition of photoinitiator in the coating after drying.

[0038] Use of the photoinitiator in accordance with the teachings of the present invention improves the lightfastness to the printed ink that is on the order of 5 to 20% better than inks printed on coated print media that do not include the photoinitiator.

[0039] In testing lightfastness, an accelerated test is performed, described below. Of the three colors employed in inkjet printing, magenta is usually the worst dye for lightfastness considerations, and thus in any ink set, efforts are made to improve the lightfastness of the ink containing that dye. Cyan dyes generally exhibit improved lightfastness properties over magenta, followed by yellow dyes; often, yellow produces such low contrast that the change is not noticed by the human eye. It should be noted, however, that illuminant, environmental conditions, and airborne pollutants, among other factors, can fect this order.

[0040] In the lightfastness test, a measurement is made of the optical density (OD) prior to the test and subsequent to the test. The severity in the decrease in optical density is a measure of lightfastness; a larger decrease in OD is indicative of poorer lightfastness.

[0041] Acceptability criteria have been established for each color. Based on perception, yellow dyes can suffer a decrease of 35% in optical density from an initial optical density before the viewer perceives that there is any change. Likewise, cyan dyes can lose 25% in OD before the viewer perceives that there is any change. With magenta dyes, the loss value is 20%; smaller OD losses in magenta are more noticeable than those for cyan or yellow.

[0042] In one system tested, without the presence of a photoinitiator, a lightfastness of about 5 years was observed under accelerated lightfastness conditions before the magenta OD exceeded the acceptability limit (20%). However, this same system with 0.01 wt% photoinitiator gave between 5.5 and 6 years in subsequent testing. As the inherent fade performance of a given formulation worsens, the initiator tends to decrease, but the improvement hovers around 5% at a minimum. High chroma, low lightfastness colorants benefit less from the photoinitiator addition. The highest chroma inks still showed around a 5% improvement. Conversely, lower chroma, higher lightfastness colorants benefit more from the addition.

[0043] Some related experiments have been performed in which the image side of the print medium was sealed with an essentially impermeable coating and the lightfastness was found to improve significantly; for example, a 6 year coating improved to 9 years. Without subscribing to any particular theory, it is believed that this impermeable coating reduced the diffusivity of oxygen into the image coat and therefore improved lightfasmess. This underscores the significance of O_2 diffusion coupled with singlet oxygen formation.

EXAMPLES

[0044] Glossy print media were coated with ink-receptive coatings, such as taught in above-referenced U.S. Patent 5,880,196, with and without the presence of a photoinitiator. In each instance, the photoinitiator was Darocur® 1173. The coated glossy print media were printed with a set of inkjet inks (cyan, yellow, and magenta). Each ink comprised colorant (or colorant mixture) and a vehicle comprising a surfactant (or surfactant mixture), at least one water-miscible organic co-solvent, and water. The inks in the ink set had a composition similar to that commercially available with Hewlett-Packard's DeskJet 970C series.

[0045] Accelerated lightfastness was conducted with a fadeometer, using high intensity cool-white fluorescent light bulbs, to simulate office conditions. An exposure of about 4 to 5 days in the fadeometer has been determined to be substantially equivalent to an exposure of 5 years under ordinary office lighting conditions. The test is carried out in two separate time periods in order to obtain three optical density points for interpolation/extrapolation.

[0046] The Table below provides the results in hue shift/color for three separate series of compositions, one containing 0.005 wt% of photoinitiator (PI) in the coating as applied, one containing 0.01 wt% of the photoinitiator in the coating, and one containing no photoinitiator. In both instances where photoinitiator was used, the photoinitiator was α,α-dimethyl-α-hydroxy acetophenone, from Ciba Co. under the trade mark Darocur® 1173. The % loss is based on the optical density loss starting at an OD of 0.5. The "Acceptable?" is based on the perception for each color, given above. The extrapolated years to failure is based on the three points derived from the measured results obtained by the fadeometer.

Table.

Lightfastness Results with and without Photoinitiator.				
Sample ID	Hue Shift/Color	% Loss from 0.5 O.D.	Acceptable?	Extrapolated # yrs to failure
1: 0.005 wt% PI	Cyan	16.3%	Yes	7.7
	Magenta	15.9%	Yes	6.6
	Yellow	14.8%	Yes	14.0
2: 0.01 wt% PI	Cyan	19.1%	Yes	6.3
	Magenta	18.6%	Yes	5.4
	Yellow	18.2%	Yes	11.0

Table. (continued)

Lightfastness Results with and without Photoinitiator.				
Sample ID	Hue Shift/Color	% Loss from 0.5 O.D.	Acceptable?	Extrapolated # yrs to failure
3: no PI	Cyan	18.9%	Yes	6.4
	Magenta	20.1%	No	5.0
	Yellow	17.2%	Yes	11.7

[0047] It will be noted that the lower concentration of photoinitiator (0.005 wt%) provides superior lightfastness to the higher concentration (0.01 wt%) and that both are superior to situation without photoinitiator. This supports the claim that there must be some photoinitiator in the coating, but that the upper range of concentration is quite constrained. It will also be noted that magenta is the worst color in each case.

[0048] The foregoing results have been specifically demonstrated for glossy print media, and that is the preferred print media that is beneficially coated in accordance with the teachings herein. However, the same coating procedure with photoinitiator may also be advantageously employed with other print media, including microporous and matte-coated papers. In each instance, regardless of how poor the print medium is for lightfastness, an improvement will be obtained by employing the small amount of photoinitiator disclosed herein.

INDUSTRIAL APPLICABILITY

[0049] The use of photoinitiators in coated papers is expected to find use in providing improved lightfastness of printed inkjet inks.

[0050] Thus, there has been disclosed a method for improving lightfastness of inkjet inks. It will be readily apparent that various changes and modifications of an obvious nature may be made, and all such changes and modifications are considered to fall within the scope of the appended claims.

Claims

1. A method for improving lightfastness in coated print media provided with an inkjet receptive coating, said method comprising:

    (a) formulating at least one coating so as to contain a photoinitiator, at least one said coating comprising said inkjet receptive coating; and
    (b) coating said print media with said at least one coating, said coated print media adapted to receive at least one inkjet ink thereon;

    characterised in that the photoinitiator consists essentially of α,α-dimethyl-α-hydroxy acetophenone and wherein at least said inkjet receptive coating is formulated to contain from 0.001 to 0.01 wt% of said photoinitiator, based on a total solids content of 12 wt% in the coating composition prior to applying and drying it on the point media.

2. The method of Claim 1 wherein at least said inkjet receptive coating is formulated to contain about 0.005 wt% of said photoinitiator.

3. The method of Claim 1 wherein at least said inkjet receptive coating on said paper, upon drying, contains said photoinitiator in a concentration ranging from 0.008 to 0.08 wt%, based on an initial solids concentration of 12 wt% in said coating prior to drying.

4. The method of Claim 3 wherein said concentration is about 0.042 wt%.

5. The method of Claim 1 wherein said print medium is selected from the group consisting of glossy print media, microporous print media, and matte-coated print media.

6. The method of Claim 5 wherein said print medium consists essentially of glossy print media, comprising a paper

base provided with a polyethylene film molten-extruded thereon.

7. A print medium as defined in Claim 1 having at least one coating thereon, including said inkjet receptive coating, at least one said coating, including said inkjet receptive coating, containing a photoinitiator, whereby said print medium, upon printing, has improved lightfastness over a print medium provided with said at least one coating free of said photoinitiator
characterised in that the photoinitiator consists essentially of α,α-dimethyl-α-hydroxy acetophenone and wherein at least said inkjet receptive coating is formulated to contain from 0.001 to 0.01 wt% of said photoinitiator, based on a total solids content of 12 wt% in the coating composition prior to applying.

Patentansprüche

1. Ein Verfahren zum Verbessern einer Lichtechtheit bei beschichteten Druckmedien, die mit einer Tintenstrahlempfangsbeschichtung versehen sind, wobei das Verfahren folgende Schritte aufweist:

   (a) Formulieren zumindest einer Beschichtung, um einen Fotoinitiator zu enthalten, wobei die zumindest eine Beschichtung die Tintenstrahlempfangsbeschichtung aufweist; und

   (b) Beschichten der Druckmedien mit der zumindest einen Beschichtung, wobei die beschichteten Druckmedien angepasst sind, um zumindest eine Tintenstrahltinte an denselben zu empfangen;

   dadurch gekennzeichnet, dass der Fotoinitiator im Wesentlichen aus α,α-Dimethyl-α-Hydroxyacetophenon besteht, und wobei zumindest die Tintenstrahlempfangsbeschichtung formuliert ist, um von 0,001 bis 0,01 Gewichtsprozent des Fotoinitiators zu enthalten, basierend auf einem Gesamtfeststoffgehalt von 12 Gewichtsprozent in der Beschichtungszusammensetzung vor einem Aufbringen und Trocknen derselben auf den Druckmedien.

2. Das Verfahren gemäß Anspruch 1, bei dem zumindest die Tintenstrahlempfangsbeschichtung formuliert ist, um in etwa 0,005 Gewichtsprozent des Fotoinitiators zu enthalten.

3. Das Verfahren gemäß Anspruch 1, bei dem zumindest die Tintenstrahlempfangsbeschichtung auf dem Papier auf ein Trocknen hin den Fotoinitiator in einer Konzentration enthält, die zwischen 0,008 und 0,08 Gewichtsprozent liegt, basierend auf einer anfänglichen Feststoffkonzentration von 12 Gewichtsprozent in der Beschichtung vor einem Trocknen.

4. Das Verfahren gemäß Anspruch 3, bei dem die Konzentration in etwa 0,042 Gewichtsprozent beträgt.

5. Das Verfahren gemäß Anspruch 1, bei dem das Druckmedium aus der Gruppe ausgewählt ist, die aus Hochglanzdruckmedien, mikroporösen Druckmedien und matt beschichteten Druckmedien besteht.

6. Das verfahren gemäß Anspruch 5, bei dem das Druckmedium im Wesentlichen aus Hochglanzdruckmedien besteht, die eine Papierbasis aufweisen, die mit einem Polyethylenfilm versehen ist, der auf derselben geschmolzen extrudiert ist.

7. Ein Druckmedium gemäß Anspruch 1, das zumindest eine Beschichtung auf demselben aufweist, einschließlich der Tintenstrahlempfangsbeschichtung, wobei die zumindest eine Beschichtung, einschließlich der Tintenstrahlempfangsbeschichtung, einen Fotoinitiator enthält, wodurch das Druckmedium auf ein Drucken hin eine verbesserte Lichtechtheit gegenüber einem Druckmedium aufweist, das mit der zumindest einen Beschichtung ohne den Fotoinitiator versehen ist;
dadurch gekennzeichnet, dass der Fotoinitiator im Wesentlichen aus α,α-Dimethyl-α-Hydroxyacetophenon besteht, und wobei zumindest die Tintenstrahlempfangsbeschichtung formuliert ist, um von 0,001 bis 0,01 Gewichtsprozent des Fotoinitiators zu enthalten, basierend auf einem Gesamtfeststoffgehalt von 12 Gewichtsprozent in der Beschichtungszusammensetzung vor einem Aufbringen.

Revendications

1. Procédé pour améliorer la résistance à la lumière de supports d'impression revêtus pourvus d'un revêtement ac-

ceptant le jet d'encre, ledit procédé comprenant :

(a) la formulation d'au moins un revêtement de façon à contenir un photoinitiateur, au moins un dit revêtement comprenant ledit revêtement acceptant le jet d'encre ; et
(b) le revêtement desdits supports d'impression avec ledit au moins un revêtement, lesdits supports d'impression revêtus étant adaptés pour recevoir au moins un jet d'encre sur ceux-ci ;

caractérisé en ce que le photoinitiateur consiste sensiblement en α,α-diméthyl-α-hydroxy acétophénone et dans lequel au moins ledit revêtement acceptant le jet d'encre est formulé pour contenir de 0,001 à 0,01 % en poids dudit photoinitiateur, sur la base d'une teneur totale en matières solides de 12 % en poids dans la composition de revêtement avant son application et son séchage sur les supports d'impression.

2. Procédé selon la revendication 1, dans lequel au moins ledit revêtement acceptant le jet d'encre est formulé pour contenir environ 0,005 % en poids dudit photoinitiateur.

3. Procédé selon la revendication 1, dans lequel au moins ledit revêtement acceptant le jet d'encre sur ledit papier, lors du séchage, contient ledit photoinitiateur dans une concentration allant de 0,008 à 0,08 % en poids, sur la base d'une concentration initiale en matières solides de 12 % en poids dans ledit revêtement avant le séchage.

4. Procédé selon la revendication 3, dans lequel ladite concentration est d'environ 0,042 % en poids.

5. Procédé selon la revendication 1, dans lequel ledit support d'impression est choisi dans le groupe constitué de supports d'impression brillants, de supports d'impression microporeux et de supports d'impression mats.

6. Procédé selon la revendication 5, dans lequel ledit support d'impression consiste sensiblement en supports d'impression brillants, comprenant une base de papier pourvue d'un film en polyéthylène extrudé à chaud sur celle-ci.

7. Support d'impression selon la revendication 1 comportant au moins un revêtement sur celui-ci, comprenant ledit revêtement acceptant le jet d'encre, au moins un dit revêtement, comprenant ledit revêtement acceptant le jet d'encre, contenant un photoinitiateur, moyennant quoi ledit support d'impression, lors de l'impression, a amélioré la résistance à la lumière par rapport à un support d'impression pourvu dudit au moins un revêtement dépourvu dudit photoinitiateur ;

caractérisé en ce que le photoinitiateur consiste sensiblement en α,α-diméthyl-α-hydroxy acétophénone et dans lequel au moins ledit revêtement acceptant le jet d'encre est formulé pour contenir de 0,001 à 0,01 % en poids dudit photoinitiateur, sur la base d'une teneur totale en matières solides de 12 % en poids dans la composition de revêtement avant l'application.