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**Datasheet for the decision  
of 8 March 2019**

**Case Number:** T 0341/16 - 3.3.06

**Application Number:** 07853661.2

**Publication Number:** 2091755

**IPC:** B41M5/52, B41M5/50

**Language of the proceedings:** EN

**Title of invention:**

PRINTABLE MEDIA

**Patent Proprietor:**

Hewlett-Packard Development Company, L.P.

**Opponent:**

Omya International AG

**Headword:**

Printable media/HP

**Relevant legal provisions:**

RPBA Art. 13(1)

EPC Art. 83, 123(2), 56

**Keyword:**

Late-filed request - justification for late filing (no)  
Sufficiency of disclosure - clarity of disclosure  
Inventive step - (yes)  
Amendments - extension beyond the content of the application  
as filed (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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Case Number: T 0341/16 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 8 March 2019**

**Appellant:** Hewlett-Packard Development Company, L.P.  
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**Respondent:** Omya International AG  
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**Representative:** Maiwald Patent- und Rechtsanwaltsgesellschaft  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 2 December 2015  
revoking European patent No. 2091755 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman** J.-M. Schwaller  
**Members:** R. Cramer  
S. Arrojo

## **Summary of Facts and Submissions**

- I. In its statement of grounds of appeal the patentee (from now on "the appellant") requested to set aside the decision to revoke European patent Nr. 2 091 755 and to maintain it in amended form on the basis of one of the main request or auxiliary requests 1-4.
- II. In its reply the opponent (from now on "the respondent") requested to reject the appeal and not to admit the main request, as it had been withdrawn during the first instance proceedings.
- III. The Board issued a communication to inform the parties of its preliminary opinion that the main request would not be admitted under Article 12(4) RPBA, and that auxiliary requests 1-4 complied with the requirements of Article 83 EPC but not with those of Articles 123(2) and 56 EPC.
- IV. By letter dated 30 January 2019 and in response to the preliminary opinion of the Board, the appellant filed a new main request as well as new auxiliary requests 1-9 and an experimental report E17.
- V. The respondent requested not to admit the late-filed auxiliary requests 1-5 and 7-8 nor E17.
- VI. By letter dated 6 March 2019 the appellant filed a new main request and an auxiliary request 1.5 to be dealt with after auxiliary request 1 and before auxiliary request 2.
- VII. At the oral proceedings, the board decided not to admit the main request. The issue as to whether the invention met the requirements of Article 83 EPC was discussed.

No arguments against the admissibility of the first auxiliary request were presented, and the question of whether this request met the requirements of Article 123(2) EPC and those of Article 56 EPC (starting from document E3 (EP 1 674 275 A2) as closest prior art) was discussed. E17 was no longer relied upon by the parties.

VIII. After closure of the debate, the appellant requested to set aside the decision and to maintain the patent in amended form on the basis of the main request filed with letter dated 6 March 2019, or, in this order, one of:

- auxiliary request 1 filed with letter dated 30 January 2019;
- auxiliary request 1.5 filed with letter dated 6 March 2019 (formerly the main request filed with letter dated 30 January 2019);
- auxiliary requests 2-9 filed with letter dated 30 January 2019.

The respondent requested that the appeal be dismissed.

IX. Claim 1 of the main request reads:

*"A printable article, comprising: a substrate having a base material component and an image enhancing layer including a metallic salt disposed thereon, wherein the base material is formed from woven material formed from fibrous material wherein the substrate includes an inkjet receiving layer having a porosity of less than 0.4 milliliters per gram of inkjet receiving layer disposed between the base material and the image enhancing layer."*

X. Claim 1 of auxiliary request 1 reads:

*"A printable article, comprising: a substrate having a base material component and an image enhancing layer including a metallic salt disposed thereon, wherein the base material is formed from woven material formed from fibrous material, wherein the metallic salt is calcium chloride, and wherein the substrate includes an inkjet receiving layer having a porosity of less than 0.4 milliliters per gram of inkjet receiving layer disposed between the base material and the image enhancing layer."*

### **Reasons for the Decision**

1. Main Request - Admittance (Article 13(1) RPBA)

1.1 The Board has decided to exercise its discretion under Article 13(1) RPBA not to admit this request for the following reasons:

Amended requests, in particular when used to overcome preliminary formal objections, can significantly change the structure of the proceedings even when they are based on apparently minor modifications. This appears to be the case in the present situation, because the appellants' late reaction to the formal objection under Article 123(2) EPC made in the Boards' preliminary opinion against the substitution of "including" by "consisting of", created a new situation for the respondent, as up until that moment the respondent could have expected that the main request as filed on 30 January 2019 would likely be rejected under Article 123(2) EPC. Since in the main request the feature "metallic salt" was not restricted to  $\text{CaCl}_2$ , and this feature was restricted to  $\text{CaCl}_2$  in the following

requests, the respondent might have not expected to discuss patentability of claim 1 defining this broader version of the feature. Thus, the removal of the main cause of non-compliance with Article 123(2) EPC (i.e. the substitution of "consisting of" by the originally defined term "including" in claim 1) two days before the oral proceedings potentially confronted the respondent with a patentability discussion which he might have not expected in view of the preliminary opinion of the Board.

1.2 The appellant argued that the request was a reaction to the new objections raised in the preliminary opinion of the Board, and that this reaction had arrived at such late stage because only then had it become apparent that the prior art taught away from the subject-matter of claim 1, so that a more general definition of the composition (i.e. "including" instead of "consisting of") could be used. Furthermore, the new main request was the result of a minor amendment which could not be regarded as taking the other party by surprise.

1.3 The Board cannot follow this argumentation, because the appellant had ample opportunity to react to the preliminary opinion of the Board as evidenced by the fact that it filed a substantive reaction as well as a new main request and auxiliary requests 1-9 with letter dated 30 January 2019. The appellant thus created the impression that it consciously and deliberately only wanted to defend the main request with the "consisting of" wording. Furthermore, as explained above, even minor amendments can potentially lead to significant changes in the structure of the proceedings, in particular affecting the substance to be discussed in the assessment of patentability.

2. Auxiliary request 1 - Admittance (Article 13(1) RPBA)

2.1 The Board has decided to exercise its discretion under Article 13(1) RPBA to admit this request into the proceedings because the subject-matter of its claim 1 addresses objections under Article 123(2) EPC and 56 EPC which had been raised for the first time in the preliminary opinion of the Board. It is therefore considered that not admitting this request would unfairly deprive the appellant of the possibility to address these issues.

3. Auxiliary request 1 - Article 83 EPC

The Board has arrived to the conclusion that auxiliary request 1 complies with the requirements of Article 83 EPC. In particular, the contested feature "*inkjet receiving layer having a porosity of less than 0.4 milliliters per gram of inkjet receiving layer*" in claim 1 is held to be sufficiently disclosed for the following reasons.

3.1 The patent (par. [0029]) indicates that "*As used herein, "porosity" refers to the amount of ink that the coating can absorb during the printing process*" and that this parameter "*may be measured using a pore size analyzer from Autosorb-1 made by Quantachrome, Boynton Beach, Florida (USA)*" (an apparatus which measures BET porosity).

3.2 For the Board it is apparent that, in the light of the combined teachings of this paragraph, claim 1 must be interpreted as follows:

- the parameter "porosity" is intended to measure or estimate how much ink the layer is capable of



absorbing within its pores, so the units (milliliter/gram) defined in claim 1 must refer to pore volume per gram of layer;

- the actual value of this parameter is measured using the BET method with the aforementioned apparatus.

In other words, it is manifest for the skilled person that the "porosity" as defined in claim 1 corresponds to the porosity value calculated using a gas (in general nitrogen)-sorption BET technique.

3.3 The respondent argued that the patent failed to indicate how a gas sorption technique such as BET could be used to estimate the capacity to absorb ink. Since the gas used in this technique (generally nitrogen) was significantly different from ink, and, on top of that, different inks had different properties, the disclosures in paragraph [0029] should be regarded as contradictory, or at least as imposing an undue burden on the skilled person who, in the absence of further information, could only rely on trial and error to reproduce a layer as defined in claim 1. The respondent also brought forward that the patent failed to indicate which materials should be used to provide the "inkjet receiving layer" in order to obtain the desired technical effects.

3.4 The Board cannot follow this argumentation for the following reasons:

3.4.1 The position of the respondent appears to be based on the idea that BET techniques would not be appropriate to estimate the ink absorption capacity of a layer, so that there would be missing or contradictory

information in the patent which would prevent the skilled person from reproducing the invention.

- 3.4.2 Paragraph [0029] of the patent clearly establishes that porosity is measured using the apparatus "Autosorb-1" (i.e. using a BET measuring technique). Since nothing in the patent indicates that the value thus obtained should be further treated or adjusted, it must be concluded that the range defined in claim 1 corresponds to the porosity directly obtained with this method. In this respect, the Board notes that there is no need to show or justify that the results obtained using this technique would provide a reliable estimation of the ink absorption capacity, because the exactness or appropriateness of the selected method is not an issue to be dealt with under Article 83 EPC.
- 3.4.3 While the Board tends to agree with the respondent in that there are unknown factors (e.g. the operating parameters of the "Autosorb-1") which could introduce variability in the measured porosity, this does not represent a problem of sufficiency of disclosure under Article 83 EPC either, but one of demarcation of the scope of protection concerning Article 84 EPC.
- 3.4.4 As to the lack of information concerning the materials to be used for the "inkjet receiving layer", the Board notes that, as agreed by both parties, such layers are known to the skilled person. The Board agrees with the appellant that, according to the patent (par. [0029]), the technical effect associated with the inkjet receiving layer (i.e. reduction of cracking) is linked to the reduced porosity of the layer as defined in claim 1 rather than to the selected material. In any event, it is pointed out that the invention as defined in the claims does not make any reference to a reduced

cracking and therefore the question of whether the information in the patent suffices to obtain layers giving rise to this effect or not might be treated under Article 56 EPC and not under Article 83 EPC.

4. Auxiliary request 1 - Article 123(2) EPC

The Board has arrived to the conclusion that auxiliary request 1 complies with the requirements of Article 123(2) EPC.

4.1 In line with the arguments of the appellant, the Board considers that claim 1 is based on the combination of claims 1, 2 and 6, paragraphs [0013] and [0025], and examples 1-2 as originally filed.

4.2 The respondent argued that there was no basis in the application as originally filed for the feature "the base material is formed from woven material" because in paragraph [0013] the feature "woven" was only linked to the feature "substrate". Since the term "substrate" was described as comprising "a base medium and an image enhancing material", the definition in claim 1 of a "base material" (instead of a "substrate") "formed from woven material" would encompass combinations of features which were originally not considered such as woven base materials with other non-woven layers.

4.3 The Board cannot follow this argumentation because the terms "substrate" and "medium" (or "media") are used interchangeably throughout the application. For example, paragraph [0013] refers to canvas and fiberglass as exemplary "base medium" but also as exemplary "substrate". In paragraph [0018] it is moreover clearly indicated that both terms "substrate" and "base material" encompass substrates having certain

woven materials (e.g. canvas) alone or mixed with other materials. Furthermore, the Board notes that even if the meaning of "substrate" were to be interpreted restrictively as implying a base medium and an image enhancing layer (par. [0013]), according to the application (claim 1 and examples 1-2) the image enhancing layer is formed by a metallic salt (e.g.  $\text{CaCl}_2$ ) coating, a layer which obviously does not fall within the concept of a woven material. Therefore, it is clear that, contrary to the argument of the respondent, the original application encompasses combinations of woven base materials with non-woven layers.

- 4.4 The respondent also argued that there was no basis in the application as originally filed for the feature woven cotton as defined in claim 2.
- 4.5 The Board cannot agree with this argumentation. The original application discloses (claim 3) a fibrous base material including "cotton, rice paper, canvas, fiberglass, or a combinations thereof". The use of cotton is also mentioned several times throughout the application (par. [0013] and [0027]). In paragraph [0013] it is furthermore indicated that "in an embodiment the substrate is formed from woven material formed from fibrous materials". The subsequently defined examples (i.e. canvas material and fiberglass) cannot be construed as representing an exhaustive list, and since it is well known to provide cotton in a woven form, the skilled person would readily recognise that the general reference to woven fibrous materials in paragraph [0013] also encompasses the alternative of fibrous cotton.

5. Auxiliary request 1 - Article 56 EPC

The Board, by applying the problem-solution approach, has arrived to the conclusion that auxiliary request 1 complies with the requirements of Article 56 EPC.

5.1 Closest prior art

In agreement with both parties, document E3 is regarded as the closest prior art because it refers (par. [0070]-[0072]) to a printable article comprising a woven substrate (i.e. a cloth) pre-treated with a calcium chloride coating (par. [0159]). Furthermore, similarly to the patent in suit, this document attempts to solve the problem of bleeding in cloth substrates (par. [0076]).

Document E3 does however not disclose a low porosity ink receiving layer arranged between the base material and the image enhancing layer.

5.2 Problem solved

According to the patent in suit the problem to be solved by the present invention (par. [0029]) is to obtain "excellent image quality while maintaining good cracking performance".

5.3 Solution

The solution proposed in claim 1 is to provide a substrate with an inkjet receiving layer disposed between the base material and the image enhancing layer having a porosity of less than 0.4 milliliters per gram of inkjet receiving layer.

#### 5.4 Success of the solution

5.4.1 According to the patent in suit (par. [0029]), layers with higher porosity reduce bleeding (hence image quality) but also give rise to problems of cracking upon stretching of the substrate. The Board regards both directional effects as technically plausible because, on the one hand, it is known that bleeding is caused by materials having insufficient capacity to absorb the ink at the required rate (i.e. low porosity is related to low absorbance capacity), and, on the other hand, highly porous structures would arguably be structurally more fragile and therefore more susceptible to cracking under stress than less porous ones.

5.4.2 For the Board it is also apparent in view of examples 1 and 2 of the patent that the addition of a  $\text{CaCl}_2$  coating improves the problem of bleeding, and that, in view of the comparative tests presented in E15, this effect is maintained when this metallic salt layer is applied on top of a low porosity inkjet receiving layer.

5.4.3 The respondent argued that neither the patent in suit nor the subsequently filed documents E14 or E15 provided any evidence that the low porosity inkjet receiving layer would give rise to any technical effect, and that furthermore the value of 0.4 milliliters/gram appeared to be arbitrarily selected.

5.4.4 The Board cannot follow this argumentation because, as previously indicated, it is technically plausible (i.e. mechanistically intuitive) that large porosity is detrimental for structural stability when a substrate is exposed to certain forces such as stretching. Under

these circumstances, it is the opponent-respondent who carries the burden of proof to demonstrate that the effect does not take place. In this respect, the Board notes that the respondent has neither formulated arguments nor provided any evidence which would question the directional effect of layer porosity on cracking (i.e. that layers with low porosity are less susceptible to cracking than high porosity ones). Within this context the porosity end-value of 4 ml/g is not necessarily associated to an unexpected effect but merely intended to specify what is regarded as low porosity.

5.4.5 The Board has therefore arrived to the conclusion that the subject-matter of claim 1 successfully solves the problem of maintaining good image quality while reducing problems of cracking.

5.5 Obviousness

5.5.1 Document E3 (par. [0076]) acknowledges the problem of bleeding caused by low porosity substrates (i.e. low capacity to absorb ink) and proposes a  $\text{CaCl}_2$  pre-treatment coating (par. [0159]) and a ductile printable article which is stretched and extended in order to reduce the bleeding by increasing the rate of absorption of ink (par. [0077]).

5.5.2 While the provision of an inkjet receiving layer is, as such, well known in the field, the Board considers that the desire to increase the absorption of ink in E3 teaches away from substrates/layers having low absorption capacity. Consequently, the Board concludes that, when starting from E3 as closest prior art, the skilled person would have no incentive to consider the teachings of documents proposing inkjet receiving

layers having low porosity, let alone to arrange such layer between the  $\text{CaCl}_2$  coating and the base material as proposed in claim 1. The Board is of the opinion that this reasoning suffices to conclude that the subject-matter of claim 1 is not rendered obvious by the cited prior art.

5.5.3 The respondent argued that any one of documents E6 (EP 1 122 084 A1), E8 (EP 1 629 987 A1) and E10 (US 2003/0227531) disclosed inkjet receiving layers, and that the skilled person would consider the teachings of these documents as an obvious alternative to modify the printable article of E3.

5.5.4 The Board cannot agree with this argumentation because, as already indicated, E3 is considered to teach away from low porosity inkjet receiving layers. In any case, none of the cited documents discloses a low porosity inkjet receiving layer as defined in claim 1. In fact, most of the cited documents stress the need to ensure high ink absorption to obtain good image quality (see par. [0002] and [0005] of E6, or par. [0008] of D8), an indication which again teaches away from considering low porosity inkjet receiving layers. Furthermore, the only reference to lower porosity layers (0.4 to 0.82 ml/g; still higher than the range defined in claim 1 of the patent in suit) is presented in table 2 of E8 as part of several comparative examples described as disadvantageous due to their low capacity to absorb ink.

5.5.5 The Board therefore concludes that, even if the teachings of the cited prior art documents were combined with the disclosure of E3, the subject-matter of claim 1 would still not be rendered obvious.



6. Since the claims of the first auxiliary request meet the requirements of the EPC, there is no need to consider the lower-ranking requests.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent in amended form on the basis of the claims 1-4 of the first auxiliary request filed with letter of 30 January 2019 and a description to be adapted.

The Registrar:

The Chairman:



D. Magliano

J.-M. Schwaller

Decision electronically authenticated