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**Datasheet for the decision
of 18 October 2012**

Case Number: T 0207/10 - 3.3.03

Application Number: 03770953.2

Publication Number: 1549706

IPC: C08K 5/00, C09D 161/28,
C09D 161/04, C09D 7/00

Language of the proceedings: EN

Title of invention:
Opaque, colour-pigmented coating

Patent Proprietor:
Ciba Holding Inc.

Opponent:
PPG Industries Ohio, Inc.

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
"Amendments - added subject-matter - (yes) - main request,
first to eighth auxiliary requests"

Decisions cited:
T 0331/87

Catchword:
-



Case Number: T 0207/10 - 3.3.03

DECISION
of the Technical Board of Appeal 3.3.03
of 18 October 2012

Appellant:
(Patent Proprietor)

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Respondent:
(Opponent)

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office dated 15 October 2009
and posted on 16 November 2009 revoking
European patent No. 1549706 pursuant to
Article 101(3)(b) EPC.**

Composition of the Board:

Chairman: B. ter Laan
Members: M. C. Gordon
C. Vallet

Summary of Facts and Submissions

I. The appeal lies from the decision of the opposition division announced on 15 October 2009 and posted on 16 November 2009 revoking European patent number 1 549 706 (granted on European patent application number 03 770 953.2, derived from international application number PCT/EP2003/010835, published under the number WO 2004/031280).

II. The application as filed consisted of eight claims, whereby independent claims 1, 7 and 8 read as follows:

"1. A coating having a thickness of from 5 to 25 μm , comprising a high-molecular-weight organic material and from 5 to 9 g/m^2 coloured pigments, wherein, based on the total amount of coloured pigments,

(a) from 30 to 90 % by weight of 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione having a specific surface area of from 20 to 50 m^2/g and

(b) from 10 to 70 % by weight of a further organic coloured pigment, selected from the series consisting of quinacridone, diketo-pyrrolo[3,4-c]-pyrrole, dioxazine, indanthrone, perylene, phthalocyanine and 3-amino-1H-isoindol-1-one-oximato-metal complex pigments and solid solutions and mixtures thereof,

are present.

7. A method of coating a material with a coating, in which method a surface-coating composition is used that comprises from 5 to 15 % by weight of 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione,

based on the total non-volatile content, wherein, based on the total amount of coloured pigments,

- (a) from 30 to 90 % by weight of 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione having a specific surface area of from 20 to 50 m²/g and
- (b) from 10 to 70 % by weight of a further organic coloured pigment, selected from the series consisting of quinacridone, diketo-pyrrolo[3,4-c]-pyrrole, dioxazine, indanthrone, perylene, phthalocyanine and 3-amino-1H-isoindol-1-one-oximato-metal complex pigments and solid solutions and mixtures thereof,

are present.

8. A surface coating composition, comprising from 5 to 15 % by weight [*remainder as for claim 7*]."

Claims 2 and 3 were directed to preferred embodiments of the coating of claim 1; claims 4-6 to various articles on which there was a coating according to claim 1, 2 or 3.

III. The patent was granted on the basis of 14 claims whereby claims 1, 7 and 8 were independent and read as follows (additions compared to the originally filed claims being indicated in **bold** and deletions by ~~strikethrough~~ by the Board):

"1. A coating having a thickness of from 5 to 25 µm, comprising a high-molecular-weight organic material ~~and from 5 to 9 g/m² coloured pigments~~, **from 5 to 15 % by weight of 3,6-di(4'-biphenyl)-2,5-dihydropyrrolo[3,4-c]-pyrrole-1,4-dione, based on the total non-volatile content, at least one further coloured pigment and**

optionally additionally white pigments, black pigments or effect pigments, wherein, based on the total amount of coloured pigments,

(a) from 30 to 90 % by weight of 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione **pigment** having a specific surface area of from 20 to 50 m²/g and

(b) from 10 to 70 % by weight of a further organic coloured pigment **having a surface area of 10 to 40 m²/g**, selected from the series consisting of quinacridone, diketo-pyrrolo[3,4-c]-pyrrole, dioxazine, indanthrone, perylene, phthalocyanine and 3-amino-1H-isindol-1-one-oximato-metal complex pigments and solid solutions and mixtures thereof,

are present.

7. A method of coating a material with a coating, in which method a surface-coating composition is used that comprises from 5 to 15 % by weight of 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione, based on the total non-volatile content, **at least one further coloured pigment and optionally additionally white pigments, black pigments or effect pigments**, wherein, based on the total amount of coloured pigments,

(a) from 30 to 90 % by weight of 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione **pigment** having a specific surface area of from 20 to 50 m²/g and

(b) from 10 to 70 % by weight of a further organic coloured pigment **having a surface area of 10 to 40 m²/g**, selected from the series consisting of quinacridone, diketo-pyrrolo[3,4-c]-pyrrole, dioxazine, indanthrone, perylene, phthalocyanine

and 3-amino-1H-isoindol-1-one-oximato-metal complex pigments and solid solutions and mixtures thereof, are present.

8. A surface coating composition, comprising from 5 to 15 % by weight [*remainder as for claim 7*]."

Claims 2 and 3 were directed to preferred embodiments of the coating of claim 1; claims 4-6 to various articles on which there was a coating according to claim 1, 2 or 3; claims 9, 11 and 13 to preferred embodiments of the method of claim 7; claims 10 and 12 to preferred embodiments of the composition of claim 8 and claim 14 to the use of the composition according to claims 8, 10 or 12 for the preparation of a coating.

IV. A notice of opposition against the patent was filed on 2 October 2007, in which revocation of the patent on the grounds of Art. 100(a) (lack of novelty, lack of inventive step), Art. 100(b) EPC and Art. 100(c) EPC was requested. Objections pursuant to Art. 100(c) EPC were raised in respect of all three independent claims.

V. The decision of the opposition division was based on the claims of the patent as granted as the main request, and 7 sets of claims forming first to seventh auxiliary requests whereby the first to sixth auxiliary requests had been filed with a letter dated 12 August 2009, and the seventh auxiliary request had been filed during the oral proceedings before the opposition division. Claim 1 of the first to sixth auxiliary requests differed from claim 1 as granted in variations of the definition of the pigments (a) and (b), the details of

which are not of relevance to the present decision. In the seventh auxiliary request claims 1-6 of the patent as granted were omitted so that two independent claims corresponding to claims 7 and 8 of the patent as granted remained.

According to the decision none of the sets of claims met the requirements of Art. 123(2) EPC.

- (a) The deleted feature "5 to 9 g/m² of coloured pigments" (hereinafter "coating weight") had consistently been presented as an essential feature of the dried coating throughout the original application, both in claim 1 and in the description. The properties of the dried coating were distinct from the properties of the coating composition. There was no feature in the granted claim which could be seen as an equivalent, alternative definition of the coating weight. The amount of pigment was identified as a preferred embodiment of the coating and not as an alternative definition of the coating weight. The patent proprietor had not demonstrated that the specified amount of the pigment necessarily resulted in the coating weight as specified in claim 1 as originally filed. In contrast thereto the opponent had provided calculations showing that the specified concentration resulted in values of coating weight outside the originally specified range.

This objection applied to claim 1 of the main request and of the first to sixth auxiliary requests.

(b) Claim 1 of the seventh auxiliary request differed from claim 7 as originally filed by introduction of the surface area of 10-40 m²/g for the further organic pigment (b). The surface area of the further organic pigment had however been disclosed in the application as originally filed only for the "dry, fully cured coating". It was ambiguous whether the specified range of surface area referred to the dry coating or to the neat coloured pigments. There was however a difference between the surface area properties of the pigment in the neat form and in the presence of a binder. Furthermore no measurement method for this feature was disclosed in the patent. There was no evidence, e.g. in the form of comparative examples, to support the submission of the patent proprietor that the surface area of the neat pigment would not significantly change from the neat pigment to the pigment in the dispersion.

(c) Accordingly the patent was revoked.

VI. On 12 January 2010 the patent proprietor lodged an appeal against the decision, the prescribed fee being paid on the same date.

The statement of grounds of appeal was filed on 25 March 2010. The requests as considered by the opposition division (main request and seven auxiliary requests) were maintained.

- VII. The opponent - now the respondent - replied with a letter dated 27 July 2010.
- VIII. On 3 August 2012 the Board issued a summons to attend oral proceedings.
- IX. In a letter dated 18 September 2012 the appellant submitted eight sets of claims constituting the first to eighth auxiliary requests whereby the first to seventh auxiliary requests corresponded to the first to seventh auxiliary requests as filed with the statement of grounds of appeal. The eighth auxiliary request consisted of six claims, corresponding to claims 1 to 6 of the patent. The appellant further stated that it would not be represented at the oral proceedings.
- X. The respondent made a further written submission with a letter dated 8 October 2012.
- XI. Oral proceedings were held before the Board on 18 October 2012 in the absence of the appellant.
- XII. The arguments of the appellant can be summarised as follows:

(a) Main request - claim 1

The issue at point was to decide whether a coating defined *inter alia* by the amount of pigment based on the total non-volatile content, but not by the pigment coating weight was directly and unambiguously derivable from the application as filed.

The decisive factor was pigment concentration within the coating layer, as was explained in the second paragraph of page 1 of the application as filed.

As far as the colouristic properties of the coating were concerned, the coating weight was rather meaningless and was not essential. Conversely, the thickness of the coating layer was of significance since layers of different thickness containing the same amount of pigment per unit area would result in different appearances. Consequently original claim 1 had specified the weight of pigment per unit area as well as the thickness, from which parameters the concentration of pigment was derivable.

Neither of original claims 7 and 8 relating to a method of coating and a coating composition respectively contained a feature relating to the pigment coating weight. These claims however did specify the pigment concentration of the coating composition, which corresponded directly to the concentration in the resulting coatings.

In support of the allowability of the amendment decision T 331/87 (6 July 1989) was cited.

- (b) The surface area of the further organic coloured pigment specified in claims 7 and 8 was disclosed at original page 3, lines 3 to 5. There was no reason to think that the specific surface area of a pigment present in the coating composition should change on curing and thus be different in

the final coating. This was reflected by the fact that the specified surface areas of the pigment (b) in granted claims 1, 7 and 8 was the same.

In the coating compositions and in the final coating the pigments were dispersed throughout the binder matrix, the only difference being that in the final coating the binder was typically cured. Curing involved thermal treatment without application of external mechanical forces. As pigments were insoluble in the binder medium their properties, in particular the surface area would not be modified during curing.

XIII. The arguments of the respondent can be summarised as follows.

(a) Main request

In claim 1 as originally filed the pigment weight per unit area was a mandatory requirement of the coating. The same requirement was disclosed on page 2 of the description. According to page 1, first paragraph the aim of the patent was to provide thin coatings with high pigment weights. The concentration of pigment was however discussed in the context of the composition used to apply the coating, e.g. rheology aspects (application page 5 line 24 and page 6 line 8), not the final coating. Thus the application as filed emphasised the distinction between the properties of the finished coating and the properties of the composition for applying the coating.

The features of pigment concentration and coating thickness now present in claim 1 did not lead to exactly the same claimed subject-matter since they did not provide a restriction equivalent to the coating weight which was, according to the originally claimed subject-matter, an essential feature. Consequently the features of pigment concentration and coating thickness could not serve as an allowable alternative to the specification of the coating weight.

This non-equivalence had been shown in the calculation presented in the notice of opposition.

- (b) Regarding claims 7 and 8, the surface area of the pigment disclosed in claim 2 and description page 2, line 20 as originally filed related to the dry, fully cured coating, not to the coating composition. It had not been shown that the surface area of the pigment remained unchanged upon curing the coating composition nor was it plausible that this was the case.

A further problem was that no method was disclosed to measure the surface area, indeed no method was even known that would enable the surface area of a pigment within a coating to be determined. Consequently it was unknown in the "scientific world" what happens to the surface area of a pigment when forming a coating from a coating composition.

XIV. The appellant (patent proprietor) requested that the decision under appeal be set aside and that the patent

be maintained on the basis of one of the sets of claims according to the main request (claims as granted) or on the basis of the first to eighth auxiliary requests submitted with letter dated 18 September 2012.

- XV. The respondent (opponent) requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. Article 123(2) EPC

- 2.1 In claim 1 of the present main request, corresponding to claim 1 of the patent as granted, the feature relating to the coating weight (from 5 to 9 g/m² coloured pigments) has been deleted compared to originally filed claim 1. Instead the claim specifies the amount of 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione (5-15% by weight) in relation to the total non-volatile content.

The objection raised by the respondent, i.e. that the features of claim 1 as granted did not lead to exactly the same claimed subject-matter as the originally filed claim appears to relate to the question of scope of protection of the claim. This is a matter which is governed by Art. 123(3) EPC. Since the disputed modification had been made at the examination stage, the applicable Article is however Art. 123(2) EPC,

which forbids extension beyond the content of the application as filed, not beyond the content (or subject-matter) of the claims as filed.

The question to be answered in the present case is therefore whether the above indicated replacement has a proper basis in the application as originally filed.

2.2 The structure of the original claims as well as that of the original description is such that the first part concerns the finished, dried and cured coating (claims 1 to 6; pages 1 to 5 whereby page and line numbers refer to the publication pamphlet) and the second part the composition that is used to provide the coating (claims 7 and 8; pages 5 to 7).

2.2.1 The first two paragraphs of the application as originally filed relate to coloured finishes that can be used in thin layers.

The significance of the coating weight is explained and emphasised in the discussion in the first paragraph where it is stated that although thinner coating layers are desirable there are problems in achieving this aim since attempts to reduce the layer thickness whilst maintaining the same amount of pigment per unit area (i.e. coating weight) fail due to the rheology of the surface coating resulting in unsatisfactory gloss.

Consistent with this statement, in the application as filed the emphasis is clearly placed on the requirement of attaining a given coating weight, i.e. amount of pigment per unit area of 5 to 9 g/m² in the finished coating and it therefore emerges that provision of

coatings having the specified coating weight is central to the subject-matter of the application. The significance of the coating weight is further underlined by the disclosure in the second complete paragraph of page 2 of a preferred range of the coating weight of 6 to 8 g/m².

- 2.2.2 In the application there is no indication or statement, for example to the effect that the coating weight was either an optional or subordinate feature or one of a number of alternative ways of defining the subject-matter of the application or that the coating could be characterised in terms independent of the coating weight. Therefore, the coating weight has to be seen as an essential part of the finished coating.
- 2.2.3 The coating weight in original claim 1 was part of the definition of the finished coating, whereas the coating composition of original claim 7 was defined by the concentration of one specific pigment, which concentration is now also given in present claim 1. Whereas the coating weight as specified in feature (a) of the application as filed (page 2, line 4 and claim 1) was based on the total amount of coloured pigments, the concentration specified in part (a) of operative claim 1 concerns only one specific pigment. As there is no direct relationship between those two features, the new feature cannot be seen as an equivalent or a replacement of the coating weight.
- 2.2.4 Moreover, the replacement of the coating weight, which refers to the finished coating after curing, by a feature that had been disclosed in relation only to the

coating composition also has no basis in the original disclosure.

2.2.5 The appellant has at no point argued that the concentration specified in the granted claim resulted in the same range of coating weight as specified in originally filed claim 1 and the corresponding part of the originally filed description. Indeed to do so would be inconsistent and contradictory with the submissions made during examination proceedings, during which the then applicant had submitted that the amount of pigment per surface area in the claim was "clearly wrong".

2.3 In view of the above, it is concluded that

- the coating weight was described as essential,
- it is as such indispensable for the function of the invention in the light of the technical problem and
- the replacement or removal of this feature requires a real modification of other features to compensate for the change.

Therefore, applying the considerations laid out in decision T 331/87, cited by the appellant, also lead to the conclusion that the amendment of removing the specified coating weight, without replacing it by any feature(s) which result in equivalent subject-matter means that claim 1 of the patent as granted extends beyond the content of the application as filed.

2.3.1 Consequently the subject-matter of claim 1 of the main request does not meet the requirements of Art. 123(2) EPC.

2.4 Claim 7 of the main request is directed to a method of coating a material, characterised by the properties of the coating composition used. Claim 8 is directed to a coating composition. In both of these claims the coating composition is defined *inter alia* by the surface area of the "further organic pigment" (b). This feature was not present in original claims 7 or 8.

2.4.1 Original claim 2 did contain a feature specifying the surface area of the "further organic pigment" specified as (b) in claims 7 and 8. However in original claim 2 the specified surface area related to the pigment (b) in the coating of claim 1. Consistent with this, on page 2, line 20 of the application it is stated that "all data refer to the dry, fully cured coating". The data included in this part of the description relating to the coating are, *inter alia*, the surface area of the further organic pigment (page 3, line 3-5).

The feature of the surface area of the further organic pigment has therefore been disclosed in the application as filed only for the cured coating. There is no explicit disclosure of the surface area of the further organic pigment (b) in the coating composition before curing.

2.4.2 Nor can any implicit disclosure relating to the surface area of the further organic pigment in the coating composition be derived from the application as filed.

This is because the patent does not provide any indication of the method by which the surface area is to be measured, and hence does not provide any indication, even in general terms, of what properties(s)

of the pigment are indicated or encompassed by the term "surface area".

Accordingly there is no disclosure in the application as filed which would, in the light of technical considerations, constitute even an implicit disclosure that whatever properties of the pigment were subsumed by the term "surface area" would necessarily be identical in the coating composition and in the cured coating.

Under these circumstances the Board has no basis for concluding that the "surface area" of the pigment would remain unchanged upon the transition from coating composition to cured coating.

2.4.3 It is therefore concluded that on the basis of the explicit as well as the implicit disclosure of the application as filed the subject-matter of claim 7 of the main request extends beyond the content of the application as filed contrary to the requirements of Art. 123(2) EPC.

2.5 The main request therefore is refused.

First-sixth auxiliary requests

3. All of the first-sixth auxiliary requests contain a claim corresponding in essence to claim 1 of the main request. The respective claims 1 retains the definition of coating thickness and pigment concentration as noted for the main request. Hence none of these have any feature which is equivalent to the feature deleted compared to claim 1 as originally filed. The

considerations as set out for the main request apply correspondingly to the first-sixth auxiliary requests.

Similarly all of the first to sixth auxiliary requests contain claims corresponding to claims 7 and 8 of the main request. The considerations set out above in respect of the main request apply to the relevant claims of the first to sixth auxiliary requests.

Hence the first to sixth auxiliary requests do not meet the requirements of Art. 123(2) EPC and are refused.

Seventh auxiliary request

4. The seventh auxiliary request no longer contains claims directed to the coating. Instead claims 1 and 2 thereof correspond to claims 7 and 8 of the main request. The conclusions as set out above with respect to claims 7 and 8 of the main request apply to claims 1 and 2 of the seventh auxiliary request.

The seventh auxiliary request does not meet the requirements of Art. 123(2) EPC and is therefore refused.

Eighth auxiliary request

5. The eighth auxiliary request consists of claims 1-6 of the main request. Claim 1 of this request consequently suffers from the same deficiencies with respect to Art. 123(2) EPC as set out for the main request.

The eighth auxiliary request is refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

E. Goergmaier

B. ter Laan