BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [X] To Chairmen
(D) [ ] No distribution

Datasheet for the decision of 17 December 2009

Case Number: T 0783/07 - 3.3.01

Application Number: 99960638.7

Publication Number: 1135443

IPC: C09D 5/44

Language of the proceedings: EN

Title of invention:
Bismuth oxide catalyst for cathodic electrocoating compositions

Patentee:
E.I. DU PONT DE NEMOURS AND COMPANY

Opponent:
PPG Industries, Inc.
BASF Coatings AG

Headword:
Bismuth oxide for electrocoating compositions/E.I. DU PONT DE NEMOURS

Relevant legal provisions:
EPC Art. 123(2)(3), 84, 83, 54(2)
RPBA Art. 13(1)(3)

Relevant legal provisions (EPC 1973):
-

Keyword:
"Main request - Novelty (no)"
"Auxiliary requests 2 to 4 - Extension of the claimed scope (yes)"
"Late filed request - not accepted - shifting of subject-matter"

Decisions cited:
G 0001/93, G 0002/88

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0783/07 - 3.3.01

D E C I S I O N
of the Technical Board of Appeal 3.3.01
of 17 December 2009

Appellant: (Patent Proprietor)
E.I. DU PONT DE NEMOURS AND COMPANY
1007 Market Street
Wilmington
DE 19898 (US)

Representative:
Heinemann, M.
Abitz & Partner
Patentanwälte
Postfach 86 01 09
D-81628 München (DE)

Respondents: (Opponent)
PPG Industries, Inc.
One PPG Place
Pittsburgh
Pa 15272 (US)

Representative:
Herz S.
Polypatent
Postfach 40 02 43
D-51410 Bergisch Gladbach (DE)

(Opponent)
BASF Coatings AG
CT/R-B311
Glasuritstrasse 1
D-48165 Münster (DE)

Representative:
Steffan G.
Leifert & Steffan
Patentanwälte
Postfach 10 40 09
D-40031 Düsseldorf (DE)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 28 February 2007 revoking European patent No. 1135443 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: P. Ranguis
Members: J.-B. Ousset
C.-P. Brandt

Summary of Facts and Submissions

I. The patentee (appellant) lodged an appeal against the decision of the opposition division to revoke the European No. 1 135 443.

II. Oppositions were filed against the patent in suit for lack of novelty and lack of inventive step (Article 100(a) EPC), insufficiency of disclosure (Article 100(b) EPC) and on the ground that the claimed subject-matter extended beyond the content of the application as originally filed (Article 100(c) EPC).

III. The oppositions were based inter alia on the following documents:

(1) US-A-5 554 700
(1a) WO-A-93/24578
(9) Experimental report filed in appeal proceedings T 777/98

IV. The opposition division considered that:

- Main request was in contravention of Article 123(2) EPC, because the expression "the composition is free of lead and tin compounds" could not be deduced directly and unambiguously from the description as originally filed.

- Auxiliary request 2 was regarded as not novel over at least example 14 of documents (1)/(1a) and the experimental report of document (9).

- Claim 1 of the third auxiliary request was not reproducible, because there was no method available to measure the amount of bismuth trioxide in the final coating composition. Claim 3 was also regarded as insufficiently described and more particularly the conditions to be applied where carrying out step d) of the process described therein.

Moreover, auxiliary request 1 was abandoned by the patentee during oral proceedings.

V. The appellant submitted with its letter setting out the grounds of appeal a main request, whose claims 1 to 4 corresponded to claims 1 to 4 of the third auxiliary request filed during oral proceedings on 31 January 2007 before the opposition division and four auxiliary requests.

Claim 1 of the main request read as follows:

"1. An aqueous cathodic electrocoating composition having a binder of an acid-neutralized epoxy-amine adduct and a blocked poylisocyanate crosslinking agent; wherein the electrocoating composition comprises dispersed bismuth trioxide, in a catalytic amount of 0.1-5% by weight, based on the weight of the binder and the composition is free of any lead and tin compounds."

Claim 1 of the second auxiliary request read as follows:

"1. Use of bismuth trioxide dispersed in an aqueous cathodic electrocoating composition as a catalyst for

the reaction between an epoxy amine adduct and a polyisocyanate crosslinking agent under baking conditions after said electrocoating composition has been cathodically electrodeposited on a substrate, wherein said electrocoating composition has a binder of an acid-neutralized epoxy-amine adduct and a blocked polyisocyanate crosslinking agent, wherein 0.1-5 % by weight of bismuth trioxide, based on the weight of the binder, have been incorporated into said electrocoating composition, and wherein said electrocoating composition is free of any lead and tin compounds."

Claim 1 of the third auxiliary request read as follows:

"1. Use of bismuth trioxide as a catalyst for the reaction between an epoxy amine adduct and a polyisocyanate crosslinking agent of a cathodically electrodeposited coating film during the bake curing thereof, wherein the cathodically electrodeposited coating film contains bismuth trioxide, wherein the coating film has been cathodically electrodeposited from an aqueous cathodic electrocoating composition having a binder of an acid-neutralized epoxy-amine adduct and a blocked polyisocyanate crosslinking agent wherein 0.1-5 % by weight of bismuth trioxide, based on the weight of the binder, have been incorporated into the electrocoating composition, and wherein the electrocoating composition is free of any lead and tin compounds."

Claim 1 of the fourth auxiliary request read as follows:

"1. Use of dispersed bismuth trioxide as a catalyst for the reaction between an epoxy amine adduct and a polyisocyanate crosslinking agent of a cathodically electrodeposited coating film during the bake curing thereof, wherein the cathodically electrodeposited coating film contains bismuth trioxide, wherein the coating film has been cathodically electrodeposited from an aqueous cathodic electrocoating composition having a binder of an acid-neutralized epoxy-amine adduct and a blocked polyisocyanate crosslinking agent wherein 0.1-5 % by weight of bismuth trioxide, based on the weight of the binder, have been incorporated into the electrocoating composition, and wherein the electrocoating composition is free of any lead and tin compounds."

The appellant submitted the following documents and argued as follows:

(14) Experimental Report submitted by the patentee with its letter of 10 July 2007, 7 pages.
(15) Journal of Catalysis 222 (2004), 268-280
(16) Physical Review B, vol. 41, number 1, (1990), pages 193-199
(17) X-Ray Absorption, Edited by D.C. Koninsberger and R. Prins (1988), Synopses and reviews.

- The corresponding passages of the description were cited in order to justify that the amendments in the different requests submitted were performed in

accordance with the requirements of Article 123(2) and (3) EPC.

- The conclusions of the opposition division as to the reproducibility of the claimed invention were not based and/or supported by any test, which could justify that bismuth trioxide was further converted in other bismuth-containing species when making the coating. The burden of proof lay with the opponents (respondents).

- An experiment was carried out (document (14) sent with letter of 10 July 2007) by the appellant. This document intended to show that bismuth trioxide was not chemically modified during the formation of the coating (see figure 2 of document (14)). Document (14) showed that bismuth trioxide added during the preparation of the coating film remained in the form of bismuth trioxide in the coating composition and the coated film. It was concluded that bismuth trioxide could be analysed by the person skilled in the art using its common general knowledge.

- The information presented in the application as originally filed allowed the person skilled in the art to reproduce the process of claim 3. The requirements of Article 83 EPC were thus met.

- The disclosure of document (1) related to the formation *in situ* and thus concerned compositions containing bismuth salts solubilised, which was in clear contrast to the invention wherein the bismuth oxide is dispersed.

VI. Respondent I (opponent 1) provided the following arguments in response to the appellant's grounds of appeal:

- The amount of the bismuth trioxide as disclosed in the application as originally filed related only to the amount of bismuth trioxide added to the coating composition, that is to say, in the initial state and the application as originally filed did not contain any disclosure with respect to the amount of bismuth trioxide in the final product. There was nothing in the application as originally filed mentioning that the whole amount of bismuth trioxide engaged remained in the final product. The appellant's test report is not relevant, because it related to a single example. Generalizing the result of one single example would amount to an unallowable generalisation of one example.

- The scope of claim 1 of the main request was not limited to a subject-matter wherein all bismuth was present in the form of bismuth trioxide. Claim 1 also covered subject-matters in which bismuth in solution was present.

VII. Respondent II argued against the appellant's arguments as follows:

- The expression "comprises dispersed bismuth trioxide, in a catalytic amount of 0.1-5% by weight, based on the weight of the binder" had no basis in the description as originally filed. The

teaching of the originally filed description was based on the fact that bismuth trioxide was added into the coating composition whereas the subject-matter of claim 1 of the main request meant that specific amount (0.1-5% by weight) of bismuth trioxide was now contained in the coating composition. On the basis of the description as originally filed, the skilled reader could not infer the outcome of said oxide, that it to say, whether the said oxide remained unchanged or was partially or totally transformed when performing the coating. This contravened the requirements of Article 123(2) EPC.

- It was also disputed that the claimed subject-matter contained only not transformed bismuth oxide in the subject-matter of claim 1 of the main request. Since the wording is open, the possibility of having solubilised bismuth salts was not excluded. Novelty was not to be acknowledged vis-à-vis document (1)/(1a). The same argument was maintained for the auxiliary request as to the alleged lack of novelty.

VIII. Oral proceedings took place on 17 December 2009 before the board of appeal. During oral proceedings, the appellant withdrew the first auxiliary request. It also submitted the originally colored version of the figures of document (14).

IX. The appellant (patentee) requested that the decision of the first instance be set aside and the patent be maintained on the basis of the main request (claims 1 to 4),or in the alternative on the basis of the second

to fourth auxiliary request (claims 1 and 2), filed with the statement setting out the grounds of appeal.

X. The respondents (opponents) requested that the appeal be dismissed.

XI. At the end of oral proceedings the decision of the board was announced.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments*

2.1 Claim 1 was amended to comprise the following feature:

"wherein the electrocoating composition comprises dispersed bismuth trioxide, in a catalytic amount of 0.1-5% by weight, based on the weight of the binder, and the composition is free of any lead and tin compounds".

2.2 Support can be found in the application as originally filed, namely:

"The invention is directed to a cathodic electrocoating composition … containing a bismuth oxide" (see page 1, lines 6-8),
"An improved aqueous cathodic electrocoating composition …; wherein the improvement is the use of

catalytic amount of bismuth trioxide dispersed in the electrocoating composition (see page 2, "Summary of the invention")
"Bismuth trioxide when adequately dispersed in an electrocoating composition is an effective catalyst …" (see page 2, lines 32-33, "Detailed description of the invention"),
"Generally, a catalytic amount of bismuth trioxide is used in the electrocoating composition such as in amounts of 0.1-5% …" (see page 2, line 37 to page 3, line 3). The respondent argued that this sentence was bound to the preceding sentence reading: "Typically, the bismuth trioxide is incorporated into the pigment dispersions used in the formulation of the electrocoating composition". However, on a proper reading of the paragraph, the Board has no doubt that those two sentences are not linked together, due to the terms "Typically" and "Generally" which in the context of the "Detailed description of the invention" addresses various independent embodiments,
"The composition is free of any lead and tin compound" (see claim 2).

2.3 Claim 2 corresponds to claim 3 as filed. The additional features of claim 3 are the same as in claim 1. Claim 4 corresponds to claim 5 as filed.

2.4 In view of the above, the subject-matter of the main request derives directly and unambiguously from the content of the application as originally filed and does not give rise to objection under Article 123(2) EPC.

2.5 Claim 1 as granted relates to a composition wherein the improvement is the **incorporation** (emphasis added by the

board) of a catalytic amount of bismuth trioxide in the composition, whereas the present claim 1 reads. "… the electrocoating composition **comprises** (emphasis added by the board) dispersed bismuth trioxide …"

The question is, therefore, whether this change of wording amounts to an extension of the protection of the patent as granted (Article 123(3) EPC).

2.5.1 When considering whether a proposed amendment to the claims is such as to extend the protection conferred, a first step must be to determine the extent of protection which is conferred by the patent before the amendment: it is necessary to be quite clear as to what is the protection conferred by the patent without amendment, before one can decide whether a proposed amendment is such as to extend it (see G 2/88, OJ EPO 1990, 93, point 4).

Article 123(3) EPC is directly aimed at protecting the interests of third parties by prohibiting any broadening of the claims of the granted patent, even if there should be a basis for such broadening in the application as filed (G 1/93, point 9, last sentence).

2.5.2 Present claim 1 relates to the remaining bismuth trioxide in the **final** state of the composition, whereas granted claim 1 relates to the amount of bismuth trioxide added and thus to the **initial** amount as added to the composition.

2.5.3 First, nothing was submitted by the respondents to show that bismuth trioxide was converted in other species after incorporation in the composition. Furthermore, in

view of the description, it appears that the process features such as "typically, the bismuth trioxide is incorporated into the pigment dispersions used in the formulations of the electrocoating composition" (see page 2, lines 55-56 of the patent in suit) is tantamount to the feature related to a state such as "the invention is directed to a cathodic electrocoating composition … containing a bismuth oxide" (see page 2, lines 5-6 of the patent in suit) or " Generally, a catalytic amount of bismuth trioxide is used in the electrocoating composition such as in amounts of 0.1-5% …" (see page 2, lines 56-58 of the patent in suit).

2.5.4 In view of the above, claims 1 and 2 as granted properly construed cover the aqueous cathodic electrocoating composition which contains 0.1-5% of bismuth trioxide based on the weight of the binder. Therefore, the subject-matter of present claim 1 does not extend the protection conferred by the patent in suit and does not give rise to objection under Article 123(3) EPC.

2.6 Compliance of the subject-matter of present Claim 1 must be verified as far as amendments are concerned. Since the board concluded that the term "comprised" was tantamount to "incorporated", there is no discrepancy between claims 1 and 3, contrary to the respondents' contentions. The requirements of Article 84 EPC are thus met.

3. *Sufficiency of disclosure*

3.1 The first objection of the respondents is based on the fact that no method for measuring qualitatively and quantitatively the content of bismuth trioxide in the electrocoating composition was available to the person skilled in the art at the priority date of the patent in suit.

3.1.1 Since the application as originally filed is silent with respect to the method to be used, the board is of the opinion that it is up to the appellant to prove that such a method was known to the person skilled in the art at the date of the application (priority was not contested and plays no role in the present case).

3.1.2 The appellant submitted as document (14) an experiment in order to demonstrate that in accordance with the patent in suit, all bismuth trioxide added during preparation remains as bismuth trioxide in the final coating. X-Ray-Absorption-Spectroscopy Method was used, i.e. XAS. Documents (15) and (16) were provided to show that this method was well-known in the art. However, document (15) was published in 2003, namely after the application date (1999). Document (16) published in 1990 is concerned with the valence state for bismuth in superconducting bismuth cuprates. Thus document (16) is directed to a person skilled in the art of solid state physics, particularly a person skilled in the art knowledgeable in the science of superconductors. This document is not part of the normal knowledge of the skilled person in the art to which the present invention is related. The appellant furthermore submitted as document (17) a leaflet of a textbook published in 1988. This reference is cited in document (14) for describing the method used in the acquisition

and analysis of Bismuth L-3edge X-Ray absorption spectra (see page 3, bottom). The synopses and reviews of this leaflet indicate that this textbook describes several specific spectrometric techniques that are very useful in elucidating the fundamental nature of matters. Articles explain the phenomena and describe examples of X-Ray absorption applications in several fields including … **catalysis** … **and liquid systems** (emphasis added by the board). Contributors explain the underlying theory, how to set up X-ray absorption experiments, and how to analyze the details of the resulting spectra. This volume will be of particular interest to physicists, chemists, biologists and materials scientists (see Synopses and Reviews). It derives therefrom that in the absence of evidence to the contrary the person skilled in the art had the possibility before or at the filing date of the application to identify by an X-Ray-Absorption-Spectroscopy bismuth trioxide in the electrocoating composition defined in Claim 1.

3.1.3 Although as admitted by the parties the XAS requires heavy equipment (50 at most are available in the world), this finding cannot rebut the fact that the equipment was available to the person skilled in the art.

3.1.4 The respondents contended further that the methodology presented by the appellant (document (14)) is only qualitative. This method will work only under one condition, i.e. that bismuth trioxide will not react during preparation of the electrodeposition composition to produce other bismuth species. It follows that for the vast majority of embodiments covered by claim 1 the method used is not suitable since a quantitative

determination of the amount of bismuth trioxide in the final coating composition can only be made if no reaction takes place.

3.1.5 However, although the method XAS set out in document (14) does not show that a quantitative analysis of bismuth in the electrocoating composition is possible, this disputed finding plays no role. Indeed, it is to be noted that the description mentions a method for preparing the claimed electrocoating composition, namely incorporating in the mixture 0.1-5% of bismuth trioxide. The board agrees with the respondents that this method will work only under one condition, i.e. that bismuth trioxide will not react during preparation of the electrodeposition composition to produce other bismuth species. This is nevertheless the case in the experiments described in document (14). Indeed, in the conclusion of the report it is said: "No other form of bismuth was detected to our detection limits of less than 100ppm. Therefore, the liquids and coatings (cured and uncured) studied here contain bismuth exclusively in the form of Bi_2O_3, bismuth trioxide". That means that the bismuth incorporated as taught in the application as filed remains as such. Therefore, the person skilled in the art following the teaching of the application as filed, namely incorporating 0.1-5%, can obtain an electrocoating composition having a content of 0.1-5% of bismuth trioxide according to Claim 1.

3.1.6 The respondents finally argued that this finding was not proper for all embodiments falling within the definition of Claim 1. The board is aware in that respect that in the experiment submitted as document (14), bismuth trioxide is dispersed in a pigment paste

which contains a grinding vehicle. However, this information can be found in the patent in suit: "Besides the binder resin described above, the electrocoating composition usually contains pigment which is incorporated into the composition in the form of a pigment paste. The pigment paste is prepared by grinding or dispersing a pigment into a grinding vehicle with the bismuth catalyst ..." (see paragraph [0018]). No evidence was submitted by the respondents to show that, by using some particular methods for preparing the electrocoating compositions according to the description of the patent in suit, bismuth trioxide would be converted in salt, destroying the unequivocal correlation between the incorporated bismuth trioxide and the bismuth trioxide present in the electrocoating composition, although the respondents bore the burden of proof that the invention could not be carried out over the whole area (see Case Law 5th edition, VI.K.5.1).

3.1.7 In conclusion, the application as originally filed gives the person skilled in the art sufficient information to obtain the electrocoating compositions substantially in the whole area defined in claim 1 (Article 83 EPC).

4. Novelty

4.1 The claimed cathodic electrocoating composition is characterized by the following constituents:

- water
- an acid-neutralized epoxy-amine adduct
- a blocked polyisocyanate crosslinking agent

- 0.1% to 5% of dispersed bismuth trioxide based on the weight of the binder
- absence of any lead and tin compounds

4.2 Document (1) discloses cathodic electrodeposition coatings which are used for the same purpose as the compositions claimed in claim 1 of the main request (see column 2, lines 15 to 21). Moreover, it is mentioned in column 6, lines 11 to 14, of document (1), that in examples 1 to 6, bismuth oxide is added to the binder combination neutralized with lactic acid. The composition of example 1 of document (1) (see table 1) contains the following constituents:

- Base resin B3 obtained by reacting in a solvent an epoxy resin based on bisphenol A, a polymeric amine, ethylhexylamine and diethanolamine to yield an epoxy amine adduct having an amine value of 117 mg of KOH/g and a hydroxyl number of 323 mg of KOH/g, in each case based on the solid (see column 3, line 54 to column 4 line 11).

- A crosslinking agent CC3 obtained by reaction of tolylene diisocyanate with alcohols so that the NCO content is less than 0.02 milliequivalents per g of sample, (see column 4, lines 41 to 54). Such crosslinking agent is, therefore, a blocked polyisocyanate.

- Lactic acid as neutralizing agent is added in an amount allowing the mixture to be soluble in water (see column 6, lines 3 to 6 and lines 13-14). This constituent corresponds to the acid-neutralized epoxy-

amine adduct of claim 1 of the main request and the water.

- Bismuth oxide is present in an amount of 1,5% weight of metal content. The bismuth oxide used is commercially available and is said to be Bi2O3, i.e. bismuth trioxide (see col. 5, lines 28-29). An amount of 1.5% of metallic bismuth corresponds to a ratio of 1.67% of bismuth oxide. Thus, this amount is within the range mentioned in claim 1 of the main request. The mixture is finally diluted with methoxypropanol to a solid content of 65% by weight. No compound containing either tin or lead have been used in example 1 in Table 1 of document (1).

Furthermore, since the bismuth oxide is added in portions with stirring (see column 6, lines 6 to 10), it is also dispersed in the binder combination neutralized with the lactic acid.

Then, using the product of example 1, a pigmented paint is prepared in a conventional manner with a solid content of 18% by weight. This solid content of 18% by weight does not change the content of 1.5% of bismuth since the content of metal is based on the solid content of the total binder (see footnote below Table 1). From this paint, a film is cathodically deposited on zinc-phosphatised steel panels and stoved at temperatures of 160°C, 170°C and 180°C (see column 6, lines 19-27).

4.3 Document (1) indicates that "when lactic acid or dimethylpropionic acid is used as the neutralising agent for the cationic paint binder, the bismuth salts

can be replaced partly or wholly by employing the corresponding amount of bismuth oxide or bismuth hydroxide, whereby the bismuth salt used in accordance with the invention is formed in situ" (see column 2, lines 38 to 43).

Referring to this passage, the appellant argued that the bismuth specie in the electrocoating composition was not the bismuth trioxide but the bismuth salt.

4.4 However, on the one hand, the formation of bismuth salts like lactate requires the reaction during 6 hours at 70°C of bismuth trioxide with lactic acid in a molar ratio (1:7) (see column 5, lines 19 to 21). On the other hand, in the preparation of the neutralised epoxy amine adduct, the lactic acid is added in the amount necessary for the mixture to be readily soluble in water (see column 6, lines 3 to 5). Then bismuth trioxide is added (therefore, after the neutralization of the epoxy amine adduct). In the board's judgment, the amount of lactic acid necessary for rendering soluble the epoxy amine adduct (resin base B3), is not higher than the amount necessary to neutralise all the groups present on the adduct, and probably lower. That means that no surplus of lactic acid liable to convert the bismuth trioxide into bismuth lactate is available. Therefore, the active bismuth specie acting as catalyst in the electrocoating composition of example 1 (see last paragraph of point 4.3) is the bismuth trioxide in an amount of 1.67% based on the weight of the resin B3 (see point 4.3 above) falling within the range defined in claim 1. No hidden effect due to the use the bismuth trioxide as catalyst can be acknowledged, either.

4.5 Therefore, all the features of the electrocoating composition of claim 1 of the main request are already disclosed in example 1 of document (1).

4.6 The appellant supported the view that the specific amount of bismuth trioxide (0.1 to 5% wt of the binder) was to be regarded as the distinguishing feature for the compositions of claim 1 compared to the ones described in the prior art.

4.6.1 This is in contradiction to the disclosure of document (1) (see point 4.2 above).

4.7 Thus, the main request does not fulfil the requirement of novelty (Article 54(2) EPC).

Auxiliary requests 2 to 4

5. *Amendments*

5.1 Claim 1 of each request 2 to 4 concerns the use of bismuth trioxide as a catalyst for the reaction between an epoxy amine adduct and a polyisocyanate crosslinking agent under baking conditions (see auxiliary request 2, "baking conditions" and auxiliary requests 3 and 4, "bake curing").

5.2 In the granted version of the claims, the electrocoating composition, the substrates coated with it, which are **dried and cured** (emphasis added by the board) and a process to prepare the said coating composition were protected.

5.2.1 The appellant contended that, according to the jurisprudence of the EPO, shifting from a claimed object considered as not novel (in the present case, the composition of claim 1 of the main request) to its use does not contravene the requirements of Article 123(3) EPC. The appellant further argued that the substrate obtained by using bismuth oxide as a catalyst after baking the composition is identical to the one claimed in claim 6 as granted. As to the expressions "baking conditions" or "bake curing", the appellant put forward that the person skilled in the art would read the content of the description to interpret the meaning given to these terms.

5.2.2 This line of arguments does not convince the board. Contrary to the appellant's argument, the expressions "baking conditions" or "bake curing" in the wordings of claims 1 of these requests do not clearly and unambiguously mean that the obtained coated substrates are identical to the ones claimed in the granted version or that the coated substrates obtained according to claims 1 of auxiliary requests 2 to 4 have a limited scope compared to the subject-matter of claim 6 of the granted version, which requires that the composition coating the substrate must be dried and cured. A term in a claim is to be read in its broadest meaning and thus the expression "baking conditions" is, in the board's opinion, equivalent to submitting an object to a temperature increase and it cannot be excluded that some coated substrates obtained by the use of bismuth trioxide, according to claims 1 of auxiliary requests 2 to 4, are not baked for a sufficient time for the composition covering the said substrate to be cured (see [0025] of the patent in suit

and point 5.2 above). Furthermore, the expression "bake curing" has no specific meaning in the description as originally filed and depending upon the temperature at which the "bake curing" is performed, water is not necessarily entirely removed from the cured composition. Consequently the film obtained in accordance to the processes of claims 1 of the auxiliary requests 2 to 4 might still contain water and is thus not necessarily dry (see point 5.2 above). Since the composition, coating the substrate, must be dry and cured in granted claim 5, the subject-matters of claims 1 of the auxiliary requests 2 to 4 extend beyond the scope of the granted subject-matter.

5.3 These requests do not fulfil the requirements of Article 123(3) EPC and are thus rejected.

Late filing of request

6. Shortly before the end of the oral proceedings the appellant requested to be given the possibility to file a further auxiliary request, because it represented a reaction to the objection of the respondents based on Article 123(3) EPC. The proposed process claim was already part of the main request and thus did not constitute a surprise for the respondents and the board.

6.1 Auxiliary requests 2 to 4 were filed with the statement of grounds of appeal. No objection under Article 123(3) EPC was raised by the respondents in the course of the appeal proceedings.

6.2 Although the appellant had to expect that the amendments carried out be examined on the basis of

Articles 123(2) and (3) and 84 EPC, the board cannot deny that the appellant could not expect such an objection before hearing the arguments of the respondents. In the given circumstances, the board could have admitted another request provided that this purported request is considered as a reaction to the objection of the respondents.

6.3 Contrary to the appellant's opinion, the proposed process claims cannot be considered to have been filed in reaction to the objection of the respondents against the auxiliary requests 2 to 4 under Article 123(3) EPC.

If it is true that the proposed request can be considered as a reaction to the objections of the respondents, these objections were present as of the responses of the respondents to the statement of grounds of appeal.

Indeed, the appellant was fully aware from the beginning of the objections of the respondents, in particular, directed against the product claims 1 and 2, it had thus ample opportunity before the oral proceedings to propose a new set of claims in order to overcome the said objections. The proposed request is, therefore, clearly late-filed, namely at a late stage of the oral proceedings and, therefore, the board does not admit this request in exercising its discretion in accordance to Article 13(1) of the Rules of Procedure of the Boards of Appeal of the EPO.

6.4 Hence, there was no reason to admit late amendments in the form of auxiliary requests on the grounds put forward by the appellant (see point 6).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar | The Chairman

B. Atienza Vivancos | P. Ranguis