

Internal distribution code:

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

**Datasheet for the decision
of 16 September 2010**

Case Number: T 0272/07 - 3.3.05

Application Number: 97932983.6

Publication Number: 0854207

IPC: C25D 13/00

Language of the proceedings: EN

Title of invention:

Cationic electrodeposition process and coating composition for cationic electrodeposition

Patentee:

Nippon Paint Co. Ltd.

Opponent:

BASF Coatings AG

Headword:

Electrodeposition/NIPPON PAINT

Relevant legal provisions:

EPC Art. 83, 123(2)

Relevant legal provisions (EPC 1973):

-

Keyword:

"Main request: extension beyond the content of the application as filed (yes)"

"All requests: sufficient disclosure of the invention (no) - undue burden in carrying out the invention throughout the whole area claimed - research programm"

Decisions cited:

T 0339/05, T 0369/05, T 0409/91, T 0435/91

Catchword:

-



Case Number: T 0272/07 - 3.3.05

DECISION
of the Technical Board of Appeal 3.3.05
of 16 September 2010

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

Representative: Isenbruck, Günter
Isenbruck Bösl Hörschler Wichmann LLP
Eastside One
Seckenheimer Landstrasse 4
D-68163 Mannheim (DE)

Respondent:
(Patent Proprietor) Nippon Paint Co., Ltd
162 oyodokita 2-chome
Kita-ku
Osaka-shi
Osaka 531-8511 (JP)

Representative: Hart-Davis, Jason
Cabinet Beau de Loménie
158, rue de l'Université
F-75340 Paris Cedex 07 (FR)

Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
1 December 2006 concerning maintenance of
European patent No. 0854207 in amended form.

Composition of the Board:

Chairman: G. Rath
Members: J.-M. Schwaller
S. Hoffmann

Summary of Facts and Submissions

I. The present appeal was lodged by the opponent (hereinafter "appellant") against the interlocutory decision of the opposition division maintaining the patent in amended form on the basis of the set of claims filed as first auxiliary request at the oral proceedings of 14 November 2006 with an independent claim 1 reading as follows:

"1. A cationic electrodeposition coating process which comprises the steps of:

(1) immersing a substrate in a cationic electrodeposition coating composition;

(2) applying a voltage between an anode and said substrate, which serves as a cathode, to thereby cause coat film deposition; and

(3) further applying a voltage to the coat film deposited so as to increase electric resistance per unit volume of said coat film, wherein, in said step (3), coat films are deposited at those sites of the substrate where coat films have not yet been deposited, said cationic electrodeposition coating composition having a time point when the electric resistance per unit volume of the coat film deposited increases to a level of not less than two-fold in the course of electrodeposition under constant-current conditions, and said cationic electrodeposition coating composition containing a nucleophilic reagent, wherein the nucleophilic reagent is an amine."

II. In the grounds of appeal dated 11 April 2007, the appellant objected to the subject-matter claimed under Articles 100(a) and 100(b) EPC.

It argued in particular that there was a lack of sufficiency across the full scope of claim 1, observing that apart from the disclosure of the sulfonium salt there was no information at all in the patent in suit as to which other potential hydratable functional groups were suitable for carrying out the alleged invention, particularly in order to achieve the so-called "not less than two-fold" increase of the electric resistance per unit volume of the coat film deposited in the course of electrodeposition under constant-current conditions.

III. Together with its observations dated 2 November 2007, the patentee (hereinafter "the respondent") submitted four sets of amended claims as a main request and first to third auxiliary requests, respectively.

The claims of the main request correspond to those of the patent as maintained by the examining division.

Claim 1 of the first and third auxiliary requests reads (*differences vis-à-vis the main request emphasised by the board*):

"1. A cationic electrodeposition coating process which comprises the steps of:

(1) immersing a substrate in a cationic electrodeposition coating composition **containing a base resin**;

(2) applying a voltage between an anode and said substrate, which serves as a cathode, to thereby cause coat film deposition; and

*(3) further applying a voltage to the coat film deposited so as to increase electric resistance per unit volume of said coat film, wherein, in said step (3), coat films are deposited at those sites of the substrate where coat films have not yet been deposited, said cationic electrodeposition coating composition having a time point when the electric resistance per unit volume of the coat film deposited increases to a level of not less than two-fold in the course of electrodeposition under constant-current conditions, and said cationic electrodeposition coating composition containing a nucleophilic reagent, wherein the nucleophilic reagent is an amine, **wherein the increase in electric resistance per unit volume of the coat film takes place as a result of irreversible ion release by a hydratable functional group introduced into said base resin and contained in said coat film, which occurs in step (3).**"*

The subject-matter of claim 1 of the second auxiliary request is identical with that of claim 1 of the main request.

- IV. On 7 April 2010, the respondent announced that it would not attend the oral proceedings scheduled for 27 May 2010.
- V. During the oral proceedings, the question arose for the first time as to whether the subject-matter of claim 1 of the different requests at issue met the requirements of Article 123(2) EPC.

The further critical issues discussed were the sufficiency of disclosure of the invention

(Article 83 EPC) and the inventive step of the subject-matter claimed (Article 56 EPC).

The board decided to continue the proceedings in writing.

- VI. In a letter dated 4 June 2010, the board informed the respondent of the issues discussed at the oral proceedings. The board further invited the respondent to submit its comments and to confirm its requests within two months.
- VII. On 12 August 2010, the respondent's representative declared that it was his understanding that his client had no further comments to provide at this stage, nor any further requests to file. He also requested that proceedings were continued on the basis of the file wrapper as it stood.
- VIII. As regards the requests on file, the appellant requested that the decision under appeal be set aside and the patent be revoked.

In the absence of confirmation of the respondent's requests, the board understands that it requests that the appeal be dismissed and that the patent be maintained as decided by the first instance - namely on the basis of the claims according to the main request dated 2 November 2007 - or alternatively that the patent be maintained on the basis of the claims according to one of the first to third auxiliary requests, all dated 2 November 2007.

Reasons for the Decision

1. *Main request - Allowability of the amendments*
 - 1.1 Amended claim 1 of this request recites the feature "*said cationic electrodeposition coating composition containing a nucleophilic reagent, wherein the nucleophilic reagent is an amine*", which as such has no literal basis in the description as filed.
 - 1.2 In fact, the sole basis in the application as filed for the presence in the coating composition of a nucleophilic reagent which is an amine is to be found in the passage on page 15, lines 7 to 26 of the application as filed, which reads as follows:

"For film thickness control and throwing power improvement, a nucleophilic reagent and/or electromediator may further be added to the above cationic electrodeposition coating composition. These ingredients can promote the electrolytic reaction of the functional group capable of ion releasing upon voltage application. On the occasion when the functional group capable of ion releasing upon voltage application undergoes electrolytic reduction, said nucleophilic reagent promotes the cleavage of the bond between the hetero atom, which constitutes the functional group capable of ion releasing upon voltage application, and the carbon atom in the resin skeleton. Since the carbon atom in the resin skeleton is biased toward the electronically positive side, a nucleophilic attack on said carbon atom can cause said cleavage. The nucleophilic reagent is therefore not limited to any particular species provided that it has a lone electron

pair having nucleophilicity. As specific examples, there may be mentioned amines such as aliphatic amines, alicyclic amines and aromatic amines, among others."

It can be seen from this passage that the nucleophilic reagent in fact promotes the cleavage of the bond between the hetero atom constituting the functional group capable of ion releasing upon voltage application and the carbon atom in the resin skeleton.

Hence, the presence of a functional group comprising a hetero atom and capable of ion releasing upon voltage application is necessary to achieve the cleavage of the heteroatom-carbon bond promoted by the nucleophilic reagent and so this feature is to be seen as being inextricably linked to the nucleophilic reagent, in particular when the latter is an amine.

Since said feature inextricably linked to the nucleophilic reagent has been omitted from the subject-matter of claim 1 at issue, the requirements of Article 123(2) EPC are not met.

2. *Main request - Sufficiency of disclosure (Article 100(b) EPC)*

2.1 It is established jurisprudence of the boards of appeal that the requirements of sufficiency of disclosure are only met if the invention as defined in an independent claim can be performed by a person skilled in the art in the whole area claimed without undue burden, using common general knowledge and having regard to further information given in the patent in suit (see decisions

T 409/91, OJ EPO 1994, 653, point 3.5 of the reasons;
T 435/91, OJ EPO 1995, 188, point 2.2.1 of the reasons).

2.2 In the present case, claim 1 defines in particular the electrodeposition coating composition as "*having a time point when the electric resistance per unit volume of the coat film deposited increases to a level of not less than two-fold in the course of electrodeposition under constant-current conditions*", i.e. by means of a result to be achieved.

Since the peculiarity of the definition of a technical feature by a result to be achieved resides in the fact that this mode of definition comprises an indefinite and abstract host of possible alternatives, it has to be determined whether or not the patent in suit makes available to the person skilled in the art the host of variants encompassed by the definition proposed in that claim.

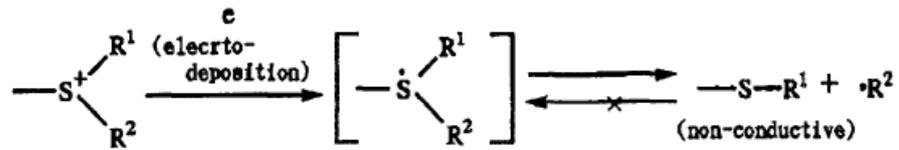
2.3 In the case at issue, the question thus arises as to whether the skilled person finds sufficient guidance in the contested patent for identifying the coating compositions which have "a time point" satisfying the requirements of claim 1, and whether there are sufficient instructions regarding the measures to be taken in case of failure, i.e. in case the coating compositions would have a "time point" not satisfying the requirements of claim 1 at issue.

2.4 According to paragraph [0027] of the contested patent, the cationic electrodeposition coating composition preferably contains "*a component having a functional group capable of ion releasing upon further voltage*

application to the deposited coat film after coat film deposition on the surface of the substrate"; and according to paragraph [0028], the functional group capable of ion releasing upon voltage application "is not critical but preferably is a hydratable functional group, in particular sulfonium salt."

The patent however does not give any indication as to how further "hydratable functional groups" might be found out by the skilled person, and so, the one and unique particular hydratable functional group disclosed throughout the whole contested patent remains the "sulfonium salt".

- 2.5 The respondent, although recognising that the polymer resins exemplified in the contested patent were all of the sulfonium type, argued that the mechanism of irreversible ion release set out in particular for sulfonium species in paragraph [0028] of the disputed patent could be extended by the skilled person to other types of functional groups. The skilled person would easily identify other cationic electrodeposition coating compositions enabling the process of present claim 1 to be achieved, and so the concept set out in the patent could be generalised to other species.
- 2.6 The board notes that paragraph [0028] discloses that:
"When a voltage or current not lower than a certain level is applied in the course of electrodeposition coating, the ionic group is lost as a result of the electrolytic reduction reaction shown below, hence can be rendered non-conductive".



However, neither the above paragraph, nor the remaining parts of the contested patent, let alone the common general knowledge, provide any technical guidance as to how a person skilled in the art could use this mechanism for identifying a further suitable "functional group capable of ion releasing upon voltage application".

2.7 So, the skilled person trying to trace cationic electrodeposition coating compositions meeting the above definition does not have at his disposal any information leading with a reasonable degree of probability towards functional groups other than the one specifically disclosed.

Consequently, the skilled person has to find out, by proceeding on a lottery basis or by conducting his own investigations without any semblance of useful guidance, which composition, if any, would meet the definition set out in claim 1.

Since the respondent itself was not able to provide any additional composition within the whole duration of the opposition and appeal proceedings, finding any such new composition amounts in the board's opinion to performing a new research program and thus - according to decisions T 339/05, item 3. and T 369/05, item 3 - constitutes an undue burden.

2.8 For these reasons, the invention as defined in claim 1 of this request cannot be performed without undue burden by a person skilled in the art within the whole area claimed. Hence, the patent in suit does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art pursuant to Article 100(b) EPC.

3. *Auxiliary requests*

The subject-matter of independent claim 1 of the first, second and third auxiliary requests at issue also contains the feature "*having a time point when the electric resistance per unit volume of the coat film deposited increases to a level of not less than two-fold in the course of electrodeposition under constant-current conditions*". For the same reasons as indicated in items 2.2 to 2.7, the invention as defined in claim 1 of these requests cannot be performed without undue burden by a person skilled in the art within the whole area claimed. So these requests also fail, at least under Article 100(b) EPC.

4. As none of the sets of claims submitted by the respondent in the appeal procedure meets the requirements of the EPC, none of the requests is allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

C. Vodz

G. Raths