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 24 July 2007

Case Number: T 1030/05 - 3.3.01

Application Number: 94304094.9

Publication Number: 0657516

IPC: C09D 157/00

Language of the proceedings: EN

Title of invention:
A clear waterborne composition having reduced microfoam

Patentee:
ROHM AND HAAS COMPANY

Opponent:
BASF Aktiengesellschaft, Ludwigshafen

Headword:
Polymeric coating/ROHM AND HAAS

Relevant legal provisions:
EPC Art. 54(1)

Keyword:
"Novelty (no) - unambiguous disclosure of the claimed method in the state of the art"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1030/05 - 3.3.01

D E C I S I O N
of the Technical Board of Appeal 3.3.01
of 24 July 2007

Appellant: (Opponent)
BASF Aktiengesellschaft, Ludwigshafen
-Patentabteilung-C6-
Carl-Bosch-Strasse 38
D-67056 Ludwigshafen (DE)

Representative:
-

Respondent: (Patent Proprietor)
ROHM AND HAAS COMPANY
100 Independence Mall West
Philadelphia
Pennsylvania 19106-2399 (US)

Representative:
Kent, Venetia Katherine
Rohm and Haas (UK) Ltd
European Patent Department
4th Floor, 22 Tudor Street
London EC4Y 0AY (GB)

Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 8 June 2005 concerning maintenance of the European No. 0657516 in amended form.

Composition of the Board:

Chairman: A. Nuss
Members: P. Ranguis
J. Van Moer

Summary of Facts and Submissions

I. The Appellant (Opponent) lodged an appeal against the decision of the Opposition Division to maintain the European patent No. 0 657 516 (European application No. 94 304 094.9) in amended form.

II. Claim 1, the sole independent claim of the set of five claims as maintained read as follows:

"1. A method for producing a clear polymeric coating on a substrate, the method comprising:

(a) forming a clear waterborne polymeric composition comprising:

(i) emulsion-polymerized water-insoluble addition polymer particles having a GPC weight average molecular weight of less than 75,000; or

(ii) multi-staged emulsion-polymerized water-insoluble addition polymer particles having an inner phase and an outer phase, the said outer phase having a GPC weight average molecular weight of less than 200,000;

wherein said emulsion-polymerized addition polymer particles of step (a)(i) or said multi-staged emulsion-polymerized addition particles of step (a)(ii) have a glass transition temperature from 5 to 85°C, as measured by DSC, and an average particle diameter from 130 nanometers to 250 nanometers;

(b) applying said clear composition to a substrate using a spraying method; and

(c) causing or allowing said clear composition to dry."

III. Notice of opposition had been filed requesting revocation of the patent in suit in its entirety under Article 100b) EPC for insufficiency of disclosure and Article 100a) EPC for lack of novelty and inventive step in view *inter alia* of document

(1) EP-A-348 565

In its decision, the Opposition Division held with respect to novelty that there was no direct and unambiguous disclosure in document (1) of water-insoluble core-shell polymer particles satisfying in combination all essential features of item a)ii). In particular, none of the worked examples of document (1) had been shown by the Opponent to anticipate said composition a)ii) used in the method of the opposed patent.

IV. In response to a communication of the Board accompanying the summons to oral proceedings, the Respondent submitted with a letter received on 17 July 2007 a fresh set of five claims as sole request. Claim 1 the sole independent claim reads as follows:

"1. A method for producing a clear polymeric coating on a substrate, the method comprising:

(a) forming a clear waterborne polymeric composition comprising:

(i) emulsion-polymerized water-insoluble addition polymer particles having a GPC weight average molecular weight of less than 75,000 and a glass transition temperature from 5 to 85°C, as measured by DSC; or

(ii) multi-staged emulsion-polymerized water-insoluble addition polymer particles having an inner

phase and an outer phase, the said outer phase having a GPC weight average molecular weight of less than 200,000;
wherein said emulsion-polymerized addition polymer particles of step (a)(i) or said multi-staged emulsion-polymerized addition particles of step (a)(ii) have an average particle diameter from 130 nanometers to 250 nanometers;
(b) applying said clear composition to a substrate using a spraying method; and
(c) causing or allowing said clear composition to dry."

V. Oral proceedings before the Board took place on 24 July 2007.

VI. The arguments of the Appellant against the novelty of Claim 1 may be summarized as follows:

The variant (ii) of Claim 1 was not novel over the disclosure of document (1). A spraying method for applying a composition comprising water-insoluble core-shell polymers was disclosed therein. Even though a part of the shell was dissolved with alkali, a portion of it remained attached with said core. Examples 6A, 17 and 18 disclosed polymer particles having a size within the definition of Claim 1. All the features of the variant (ii) could, therefore, be found in the disclosure of document (1).

VII. The arguments of the Respondent in favour of the novelty of Claim 1 may be summarized as follows:

The claimed subject-matter was distinguished from the disclosure of document (1) in that the multi-staged emulsion-polymerized addition polymers particles (ii) were water-insoluble, whereas the core-shell polymer particles disclosed in document (1) comprised a water-soluble shell. The skilled reader would have realized from reading the patent in suit that none of the polymers of the outer phase was alkali soluble. The level of copolymerized ethylenically-unsaturated acid monomers present therein was indeed low (no greater than 7% by weight), which amount determined a low water solubility. In contrast, the shell polymers of document (1) required that the weight percentage of acid-containing unsaturated monomer be not lower than 10%. This finding was confirmed by the working examples wherein the percentage of acidic monomers in the shell polymers rendered them water-soluble.

VIII. The Appellant requested that the decision under appeal be set aside and the patent be revoked.

The Respondent requested that the decision under appeal be set aside and the patent be maintained on the basis of Claims 1 to 5 submitted with the letter received on 17 July 2007.

IX. At the end of the oral proceedings the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty*

2.1 Claim 1 of the present request comprises two independent variants, namely (i) and (ii), (see point IV above). The Appellant disputed the novelty of the variant (ii) over the disclosure of document (1).

2.2 Document (1) discloses compositions comprising a core-shell polymer having an alkali-insoluble, emulsion polymer core and an alkali-soluble, emulsion polymer shell physically attached or associated with or chemically grafted to said core, so that upon dissolving said shell with alkali a portion of said shell remains attached or associated with said core so as to form a blend of neutralized core-shell polymers and an aqueous solution of neutralized shell polymer (see page 3, lines 21 to 24 and lines 9 to 11). The core polymer has a molecular weight greater than 8,000 weight average and the polymer shell preferably has a molecular weight of about 5,000 to 100,000 weight average as determined by gel permeation chromatography (see page 3, lines 45 to 47 and 55-56). Since the core-shell polymers are, in particular, acrylic polymers (see page 3, lines 32 to 37), they are addition polymers.

Application of said compositions are performed by spray or roll coating (page 6, lines 35-36). It was undisputed that drying occurs necessarily after application. The compositions are useful as a clear overprint varnish (see page 6, lines 13-14).

2.3 The Respondent argued that the skilled reader would have readily understood from the description of the patent in suit that none of the polymers of the outer phase was alkali-soluble as it was apparent from the passage stating that the level of copolymerized ethylenically-unsaturated acid monomers was not greater than 7% by weight based on the weight of the emulsion-polymerized polymer. Due to this feature, the claimed subject-matter was, therefore, distinguished from the disclosure of document (1) which required the shell polymers to be alkali-soluble.

However, this feature is not reflected in the wording of the claim. It is drawn from the description and is not commensurate with the scope of Claim 1 since the wording of this claim only refers to multi-staged emulsion-polymerized water-insoluble addition polymer particles without further specifying the properties of the outer phase. For this reason already the argument is not convincing.

2.4 Furthermore, contrary to the Respondent's contention, the core-shell particles disclosed in document (1) cannot be considered as water-soluble addition polymer particles. As stated in this disclosure, the core polymer is alkali-insoluble and a **part** of the shell polymer remains physically attached or associated with said core so as to form after neutralization a "blend of neutralized core-shell polymer and an aqueous solution of neutralized shell polymer " (see point 2.2 above). As a matter of fact, like in the patent in suit, the particles also comprise a shell or outer phase and a core or inner phase, and are water-insoluble.

2.5 Turning now to the examples in document (1) relied upon by the Appellant, Example 17 discloses aqueous emulsions of core-shell polymers for use in high gloss paint. The particles are prepared by, first, addition polymerization in emulsion of shell monomers of composition M.E.#1 in the presence of n-dodecyl mercaptan as chain transfer agent and, subsequently, addition polymerization in emulsion of core monomers of composition M.E.#2. After neutralization the particles have a particle size of 139nm. Given that upon neutralization a part of the neutralized shell polymer remains physically attached or associated with said core (see page 3, lines 21 to 24), it results therefrom that, after neutralization, polymer particles made of a core and a shell are present which, as a matter of fact, are water-insoluble. Furthermore, although the molecular weight of the shell polymer is not indicated, it is observed that the polymerisation takes place in the presence of n-dodecyl mercaptan, a chain transfer agent employed to control molecular weight between 5,000 and 100,000 (see page 5, lines 2 to 5). This is not different from what is done in the patent in suit, namely using a mercaptan as a chain transfer agent to provide a molecular weight of less than about 75,000, preferably from 10,000 to 75,000 (see page 3, lines 22-23). Therefore, the shell polymer has without any doubt a molecular weight below 200,000. The same conclusions apply concerning Examples 6A and 18 (particle size 196 and 175nm respectively). Therefore, the core-shell polymer disclosed in Examples 6A, 17 and 18 of document (1) are within the definition of the variant (a)(ii) of Claim 1 of this request.

2.6 Consequently, one of the implementations which emerges unambiguously from document (1) is the application by spray coating of one of the compositions disclosed in the working examples above cited and subsequently drying it. Such an implementation falls within the scope of the method according to Claim 1. For this reason Claim 1 does not meet the requirement of Article 54(1) EPC.

2.7 Since the Board can only decide on a request as a whole the present request is to be rejected.

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

N. Maslin A. Nuss