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D E C I S I O N
of 24 April 1997

Case Number: T 0990/93 - 3.3.3

Application Number: 85309225.2

Publication Number: 0187505

IPC: C08F 291/00

Language of the proceedings: EN

Title of invention:
Methods of making latex polymer compositions, latex polymer compositions and uses thereof

Patentee:
ROHM AND HAAS COMPANY

Opponent:
SEQUA Corporation
BASF Aktiengesellschaft

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 83, 84, 123(2)

Keyword:
"Amendments - added subject-matter (no)"
"Clarity and sufficiency of disclosure (yes)"
"Novelty - (yes) - no implicit disclosure"
"Inventive step - (yes) - state of the art not relevant"

Decisions cited:
-

Catchword:
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Case Number: T 0990/93 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 24 April 1997

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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted 17 September 1993 concerning maintenance of European patent No. 0 187 505 in amended form.**

Composition of the Board:

Chairman: C. Gérardin
Members: B. ter Laan
R. E. Teschemacher

Summary of Facts and Submissions

I. Mention of the grant of European patent No. 0 187 505 in respect of European patent application No. 85 309 225.2, filed on 18 December 1985, claiming priority from an earlier application in the USA (683902 of 20 December 1984), was announced on 10 April 1991, on the basis of eleven claims, Claim 1 for the Contracting States AT, BE, CH, IT, LI, LU and SE reading:

"A method of making an aqueous dispersion of a water-insoluble latex polymer, said method comprising

(a) preparing by emulsion polymerization an initial aqueous dispersion of initial water-insoluble latex polymer of at least one ethylenically unsaturated monomer, wherein said ethylenically unsaturated monomer comprises no more than two percent by weight, based on the total weight of said ethylenically unsaturated monomer, of multi-ethylenically unsaturated monomer and wherein said initial water-insoluble latex polymer otherwise contains substantially no sites of ethylenic unsaturation;

(b) swelling said initial latex polymer with additional ethylenically unsaturated monomer, comprising at least one monomer having at least two sites of ethylenic unsaturation, by dispersing said additional monomer in said initial aqueous dispersion, and

(c) polymerizing said additional monomer within said monomer-swollen initial latex polymer; and wherein the weight of the additional ethylenically unsaturated monomer is so chosen as to yield a ratio of weight of polymer formed therefrom to the weight of solids in the initial latex polymer of from 1:200 to 1:2."

Claims 2 to 9 were dependent and referred to preferred embodiments of the process of Claim 1.

Independent Claim 10 for the afore-mentioned Contracting States referred to:

"An aqueous dispersion of water-insoluble latex polymer particles comprising initial latex polymer of units of at least one ethylenically unsaturated monomer comprising no more than 2 percent by weight, based on the total weight of said ethylenically unsaturated monomer, of multi-ethylenically unsaturated monomer units; and a second polymeric phase comprising units of ethylenically unsaturated monomer comprising units of at least one monomer having at least two sites of ethylenic unsaturation."

Claim 11 referred to the use of a composition, comprising water-insoluble latex polymer obtained by a method as claimed in any one of claims 1 to 9, in or as a coating composition for coating flexible and rigid substrates, in or as a caulking composition or in or as a roof mastic composition.

For the Contracting States DE, FR, GB and NL the grant of the patent was based on a set of claims differing from the above-mentioned ones in that in Claim 1 the initial water-insoluble latex polymer should have, as an additional feature, a glass transition temperature of no more than 20°C. Claim 7 was adapted accordingly and Claims 2 to 6, 8 and 11 were the same as for the other Contracting States.

II. On 10 January 1992 two Notices of Opposition were filed by SEQUA Corporation (Opponent 1) and BASF (Opponent 2) and revocation of the granted patent in its entirety was requested under Article 100(a) EPC. Those grounds were supported by six documents cited by Opponent 1 and by one document (D7: GB-A-986 865) cited by Opponent 2.

III. By an interlocutory decision dated 17 September 1993, the Opposition Division held that there were no grounds of opposition prejudicing the maintenance of the patent in amended form, i.e. on the basis of Claims 1 to 11 submitted during the oral proceedings. Following an invitation of 26 May 1993 by the Opposition Division "to file a typed version of the claims submitted during the oral proceedings", on 21 July 1993 the Proprietor filed a single set of claims valid for all designated Contracting States. Claim 1 read as follows:

"A method of making an aqueous dispersion of a water-insoluble latex polymer, said method comprising

(a) preparing by emulsion polymerization an initial aqueous dispersion of initial water-insoluble latex polymer of at least one ethylenically unsaturated monomer, wherein said ethylenically unsaturated monomer comprises no more than two percent by weight, based on the total weight of said ethylenically unsaturated monomer, of multi-ethylenically unsaturated monomer and wherein said initial water-insoluble latex polymer otherwise contains substantially no sites of ethylenic unsaturation, **and wherein said initial water-insoluble latex polymer has a glass transition temperature of no more than 20°C;**

(b) swelling **essentially to equilibrium** said initial latex polymer with additional ethylenically unsaturated monomer comprising at least one monomer having at least two sites of ethylenic unsaturation, by dispersing said additional monomer in said initial aqueous dispersion; and

(c) polymerizing said additional monomer within said monomer-swollen initial latex polymer;

wherein the weight of the additional ethylenically unsaturated monomer is so chosen as to yield a ratio of weight of polymer formed therefrom to the weight of solids in the initial latex polymer of from 1:200 to 1:2; **and**

wherein the additional monomer, on polymerisation, forms a polymeric phase of discrete domains within each initial latex polymer particle; and

wherein the process steps are sequential; and

wherein a substantial proportion of the additional monomer has low water solubility and the hydrophillic/hydrophobic character of the additional monomer is balanced so that the additional monomer is polymerised mainly within the first stage polymer rather than in the aqueous phase."

(The passages differing from the claim as granted are indicated in bold by the Board).

Claim 10 read as follows:

"An aqueous dispersion of water-insoluble latex polymer particles, **each water-insoluble latex polymer particle** comprising

initial latex polymer **prepared by emulsion polymerisation** of units of least one ethylenically unsaturated monomer comprising no more than 2 percent by weight, based on the total weight of said ethylenically unsaturated monomer, of multi-ethylenically unsaturated monomer units; and

a second polymeric phase comprising units of ethylenically unsaturated monomer comprising units of at least one monomer having at least two sites of ethylenic unsaturation;

wherein the second polymeric phase is located within the initial latex polymer; and

wherein the initial polymer has a glass transition temperature of no more than 20°C; and

wherein the weight of the polymer formed from the additional ethylenically unsaturated monomer to the weight of solids in the initial latex polymer is from 1:200 to 1:2; and

wherein the second polymeric phase is discrete domains within each initial latex polymer particle; and

wherein a substantial proportion of second polymeric phase is formed from additional monomer having low water solubility."

Claims 2 to 6 and 8 and 9 remained as granted, Claim 7 was adapted according to the amendments in Claim 1 and the appendancy of Claim 11 was changed.

However, in the facts and submissions of its decision (point 1, last paragraph) the Opposition Division referred to claims dated 23 July 1992 which differed from the ones filed on 21 July 1993, so that the basis for the decision was not clear.

IV. The Opposition Division held, in essence, that:

(a) the content of the amended claims did not extend beyond the subject-matter of the application as filed,

(b) the amended patent disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a skilled person,

(c1) the claimed subject-matter was novel as none of the cited documents mentioned the combination of all the claimed features, in particular (i) the presence of discrete domains within each initial latex particle, as opposed to core-shell particles, and (ii) the weight ratio of polymer formed within the initial latex polymer particles to the solids in said initial latex polymer, and

(c2) the claimed subject-matter involved an inventive step since none of the cited documents addressed the specific problem of providing aqueous dispersions of water-insoluble latex polymer which, when used in coating compositions, were tough, hard and had tensile strength while retaining substantial extensibility and which were not tacky at ambient temperature.

V. On 12 November 1993 the Appellant (Opponent 2) lodged an appeal against the above decision and paid the prescribed fee on the same day. The Statement of Grounds of Appeal was filed on 20 January 1994.

The Appellant, in writing and during oral proceedings held on 24 April 1997, argued essentially as follows:

(a) The objection under Article 123(2) EPC raised initially against the features "wherein the process steps are sequential" and "swelling essentially to equilibrium", was no longer maintained during the oral proceedings.

(b) However, due to the unclarity of the meaning of the latter feature the skilled person was not able to carry out the invention, as it was not clear that during swelling equilibrium was reached in the first place, nor how long the state of equilibrium lasted and how it could be determined to have occurred. The moment of reaching equilibrium depended very much on time and temperature, which features were not specified. Also, it was not clear how much of the second monomer should have penetrated the first polymer particles before the second polymerisation could be started. Therefore, Article 83 EPC was not complied with.

(c) The objections against novelty and inventive step raised in the course of the opposition proceedings were maintained. No grounds upon which those objections were based were given in writing, but they were explained during the oral proceedings before the Board. They were based upon D7 (GB-A-986 865) and D3 (J. Pol. Science, Polymer Chemistry Edition (1973), Vol. 11, pages 143 to 162) and can be summarised as follows:

(c1) As regards novelty, the wording of Claim 1 did not exclude the process as described in Example XIV of D7, in which, after a first polymerisation step, further monomer was added and polymerised during

30 minutes, during which time inevitably also swelling of the first polymer by the further monomer occurred. Since the present claim included the possibility that active catalyst from the first polymerisation step was still present when the second monomer was added, so that the swelling and the second polymerisation took place at the same time, the process now being claimed was not novel over D7. As a consequence, the product thus produced also lacked novelty.

(c2) Regarding inventive step, in D3 particles of a first polymer were swollen to equilibrium with a second monomer and then polymerised, resulting more or less in two polymer domains, one within the other, although the distribution was not completely uniform. Therefore, the combination of D3 with D7, which was the closest document, would result in the claimed subject-matter. Even if the specific use of the claimed dispersions was neither explicitly nor implicitly disclosed in those documents, that would not prevent the skilled person from trying out the disclosed dispersions in order to see whether they were suitable for the present use. Therefore, no inventive step was present. Moreover, it was not inventive to use the dispersions known from D7 anyway.

VI. Together with the counterstatement of appeal, the Respondent (Proprietor) on 15 July 1994 filed a set of amended claims by way of auxiliary request, which differed from the claims as amended during the opposition procedure in that the passages to which the Appellant had objected were deleted and the wording of

the second polymerisation step was changed. Also, in view of the unclarity regarding the basis for the Opposition Division's decision, during the oral proceedings before the Board the claims forming the main request (corresponding to those filed on 21 July 1993) were filed again.

The Respondent, in its written and oral submissions, gave essentially the following arguments:

(a) The parts of the description supporting the amendments in the claims were pointed out.

(b) In the particles resulting from "swelling to equilibrium" the domains constituted by the second polymer were distributed evenly throughout the first polymer particle, with possibly, but not necessarily, a minute shell surrounding the first particle. This was illustrated by the electron micrograph filed during the proceedings before the first instance by letter of 14 April 1993. If swelling was not continued to equilibrium, the second monomer would only partially have penetrated the first polymer particle and the polymer formed from the second monomer would be concentrated at the border of the first polymer particle. Thus, it could easily be established whether equilibrium had or had not been reached before the beginning of the second polymerisation. As reaching the state of equilibrium depended on a number of different conditions, it was not possible to define the term "swelling to equilibrium" more clearly. However, should the skilled person have any doubt as to the meaning of the term, the worked examples would provide sufficient information to carry out the invention.

(c) The Appellant had not given any grounds for its objections under Article 100(a) EPC during the written proceedings before the Board. In its written submissions the Respondent strongly criticised such conduct as it was difficult to determine the basis for those objections and to prepare counter-arguments. It was assumed that the Appellant would base its arguments on D7, since this was the only document cited by the Appellant during the proceedings in first instance. However, during the oral proceedings the objection was not maintained.

(c1) Regarding novelty, it was essential that the second stage monomer should be added to the initial latex polymer in the absence of polymerising conditions, causing swelling of the initial polymer particles; only **after** swelling the latex particles the second stage polymerisation was initiated, as indicated by the requirement that the process steps should be sequential. This process differed from the most relevant disclosure, Example XIV of D7 in that the second stage monomer in D7 was added under polymerising conditions. This resulted in core/shell particles, in which the second polymer formed no discrete domains throughout the first polymer particle. This had been demonstrated by evidence filed in first instance; the Appellant had not produced any evidence to prove the contrary.

(c2) As regards the presence of an inventive step, the problem to be solved was the provision of coatings which, while retaining substantial extensibility, showed toughness, hardness and tensile strength and could dissipate sudden stress by flow and were not tacky at ambient temperatures. D7 concerned

plastics, not coatings, and referred to completely different fields of application. D3 described core/shell particles. Therefore, the skilled person would not be led to combine the two documents nor would any combination of D3 and D7 result in the claimed subject-matter, so that an inventive step was present.

VII. Opponent 1, which had not lodged an appeal, did not take an active part in the appeal proceedings; in particular, it did not file any statement in reaction to the submissions of the Respondent and was not present during the oral proceedings before the Board, although it had been duly summoned.

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

The Respondent requested that the appeal be dismissed and that the patent be maintained with Claims 1 to 11 as submitted during the oral proceedings and the description as annexed to the decision under appeal with the proviso that page 3C be replaced by the version as submitted during the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

Procedural matters

2. The Appellant, in its Statement of Grounds, indicated that the objections under Articles 52 to 57 EPC raised during the opposition proceedings were maintained. No arguments regarding novelty and inventive step were brought forward in view of objections under

Articles 123(2) and 83 EPC against parts of the claims. Those would, however, be given after deletion of the passages objected to. With its response to the appeal, dated 14 July 1994, the Respondent filed new claims from which those passages had been removed. In spite of that, the Appellant did not file any arguments, not even after a specific request to do so by the Respondent, dated 5 March 1997.

It was not until the very late stage of oral proceedings before the Board that the Appellant brought forward its arguments supporting the grounds of lack of novelty and inventive step. Regarding the latter, those were based upon a completely new combination of two documents, one of them being the one upon which the Appellant had originally based its opposition, the other one being chosen out of six documents cited by the other Opponent, which had not filed an appeal. This combination had not been advanced before during the entire opposition and appeal proceedings. This conduct took both the other party as well as the Board by surprise and is considered to be highly undesirable. The Respondent was, however, in a position to deal with the Appellant's new attack and did not maintain its initial written objection in that respect. Therefore, the Board saw no reason to exclude the issue from consideration.

Amendments

3. As can be seen from paragraph III above, Claim 1 of the main request differs from the one as granted in a number of features, indicated in bold letters. Those amendments do not give rise to any objections under Article 123(2) EPC for the following reasons.

3.1 The glass transition temperature of no more than 20°C is based upon original Claim 7 and description page 18, line 27 to page 19, line 1 (page 7, lines 23 to 27 as granted).

3.2 The swelling essentially to equilibrium can be found on original page 7, lines 13 to 16 and page 25, lines 12 to 15 (page 3, lines 57 to 58 and page 9, lines 24 to 25 as granted).

3.3 The formation of discrete domains of the second polymer within the first polymer particles is described on original page 37, lines 9 to 22 (page 12, line 58 to page 13, line 6 as granted).

3.4 The sequence of the process steps follows from the description, examples and claims as a whole. It is clear that polymer particles can only be swollen after their formation, so that there is an unambiguous sequence of first polymerisation stage and swelling. Regarding the second polymerisation stage, the description, in particular the passages on (a) original page 23, lines 26 to 30 (page 8, lines 51 to 53 as granted) ("...**subsequently** polymerized..."), (b) original page 24, lines 31 to 34 and page 25, lines 12 to 13 (page 9, lines 13 to 14 and lines 24 to 25 granted)("**After** the additional ethylenically unsaturated monomer is added to the initial aqueous dispersion of latex polymer, **sufficient time** is allowed to permit the additional monomer to swell the latex particles." and "**After** the initial aqueous dispersion of latex polymer has been swollen essentially to equilibrium, ...") and (c) original page 37, lines 4 to 9 (page 12 lines 55 to 58 as granted)("... the additional monomer which swells the initial latex particles and is **subsequently** polymerized therein ...") clearly discloses that the second polymerisation stage

is initiated only **after** the swelling. Moreover, in almost all the worked examples the second polymerisation stage is started at least 30 minutes after addition of the second monomer. Only in Process Type 7 (page 17) 30 minutes and in Process Type L (page 18) 10 minutes lapse before initiating the second polymerisation stage. Therefore, the Board is satisfied that the requirement that the process steps should be sequential is clearly and unambiguously disclosed in the application as originally filed.

3.5 The low water solubility of a substantial portion of the additional monomer, the hydrophilic/hydrophobic balance of the additional monomer and the polymerisation of the additional monomer mainly within the first stage polymer rather than in the aqueous phase are based upon original page 23, line 30 to page 24, line 30 (page 8, line 53 to page 9, line 12 as granted).

3.6 Dependent Claims 2 to 6, 8 and 9 remain unamended, whereas dependent Claim 7 is now directed to its original preferred embodiment.

3.7 The amendments of independent product Claim 10 are mostly the same as those of Claim 1 and have the same basis. The reference to emulsion preparation and the weight ratio of from 1:200 to 1:2 of the polymer formed from the additional ethylenically unsaturated monomer to the solids in the initial latex polymer are supported by original Claim 1. The location of the second polymeric phase within initial latex polymer follows from original page 37, lines 9 to 22 (page 12, line 58 to page 13, line 6 as granted) and page 24, lines 24 to 30 (page 9, lines 9 to 12 as granted).

3.8 Claim 11 contains an additional reference to Claim 10, which is based upon the original reference to the process claims.

4. Since the addition of those further features does not extend the scope of protection of the claims as granted, the requirements of Article 123(3) EPC are also fulfilled.

Clarity and sufficiency of disclosure

5. The meaning of the term "swelling to equilibrium" was discussed in view of the Appellant's objection. The Respondent's explanation that after reaction the particle could be analysed in order to check for the distribution of the domains of the second polymer within and throughout the first polymer particle is in conformity with the disclosure in the description (page 8, line 50 to page 9, line 25, and page 12, line 44 to page 13, line 3 as granted). From those passages it is clear that the second monomer actually enters the first polymer particle and in doing so, inevitably first enters the outer regions and after some time will be present throughout the whole particle, as is demonstrated by the electron micrographs presented during the first instance proceedings as well as at the oral proceedings before the Board. Since the Appellant produced no evidence to the contrary, in particular that equilibrium would be reached without the second polymer being present throughout the first polymer particles, the Board is satisfied that the term "swelling to equilibrium" means that the swelling is continued until the domains constituted by the second polymer, formed by polymerisation of the second monomer, are distributed evenly throughout the whole of the first polymer particle, with possibly, but not necessarily, a minute shell surrounding the first particle. As it was

undisputed that the state of equilibrium and the time necessary to reach it depended on a number of different conditions, such as concentration and size of the monomer and temperature, the Board is also satisfied that the term "swelling to equilibrium" cannot be defined more clearly and, therefore, that it is sufficiently clear to provide a proper definition of the matter for which protection is sought, so that in that respect the requirements of Article 84 are met.

6. For the same reasons, the disclosure is sufficiently clear and complete to be carried out by the skilled person. It was not disputed that the examples in which, amongst other reaction conditions, times and temperatures were indicated, could be repeated and the information contained in the examples and in the other parts of the description - in particular regarding (i) the distribution of the second polymer within the first polymer particles (page 12, line 55 to page 13, line 3 as granted), (ii) the chasing of the first polymerisation mixture in order to minimize the concentrations of unreacted monomer and catalyst (page 5, lines 47 to 49 as granted) and (iii) the sequence of first swelling to equilibrium and then polymerising (page 9, lines 13 to 14 and 24 to 25 as granted) - provided the skilled person with sufficient information to carry out the invention within the ambit of the subject-matter as claimed. Therefore, the requirements of Article 83 EPC are met as well.

Novelty

7. The novelty discussion focused on the question whether Example XIV of D7 disclosed a process falling under the present terms of Claim 1, resulting in a dispersion according to present Claim 10.

7.1 In Example XIV of D7 a mixture of ethyl acrylate and glycol dimethacrylate is reacted at 60°C. When the exothermic reaction has subsided the contents of the vessel are heated to 80°C and a mixture of methyl methacrylate, ethyl acrylate and glycol dimethacrylate is added, which reaction mixture is maintained at 80°C for 30 minutes.

According to the Appellant, in those circumstances the second charge of monomers would have enough time to penetrate the particles formed during the first polymerisation stage so that the swelling as now required would take place. By contrast, the Respondent stated that core/shell particles were formed as the second charge of monomers was added under polymerisation conditions, so that no swelling to equilibrium would occur and no second polymer would be present in the centre of the first polymer particles.

7.2 The arguments of the Appellant cannot be accepted since in Example XIV of D7 the second monomer charge is added without previous chasing of the catalyst and polymerisation is continued by merely raising the temperature, so that the second addition clearly takes place under proper polymerisation conditions and any swelling that occurs does not take place **before** the second polymerisation stage. Moreover, the Respondent, with the micrographs filed with its letter of 14 April 1993 demonstrated that the particles according to present Claim 10 have a distribution of different domains within the first polymer particles, not a core/shell structure. It was thus up to the Appellant to challenge the validity of the experimental results by providing counterevidence that the process of Example XIV of D7 was equivalent to the one now claimed regarding the structure of the resulting polymer particles. In the absence of such counterevidence the

Board can only rely on the morphological differences demonstrated by the Respondent and, therefore, conclude that the process having the sequential steps and the product having the discrete domains as now required cannot be clearly and unambiguously derived from D7.

8. During the appeal proceedings no other documents were cited against novelty.

9. For the above reasons, the Board is satisfied that the subject-matter of both Claims 1 and 10 is novel.

Inventive step.

10. According to established case law of the Boards of Appeal, the question of inventive step is to be decided on the basis of the problem-solution approach and, to that end, it has first to be determined which document represents the closest state of the art and which is the technical problem solved by the claimed subject-matter.

10.1 The patent in suit concerns methods of making latex polymer compositions, latex polymer compositions and uses thereof. More particularly, the latex polymer compositions should be useful in or as coating compositions, caulking compositions and roof mastic compositions, which requires a specific combination of properties, namely toughness, hardness and tensile strength while retaining substantial extensibility, as well as the ability to dissipate suddenly applied stresses slowly by flow, and the absence of tackiness at ambient temperatures (see page 2, lines 3 to 6 and page 3, lines 40 to 42 of the patent in suit).

10.2 Latex polymer compositions have been disclosed both in D7 and D3, the only documents upon which the Appellant based its arguments regarding inventive step. None of these documents, however, mentions the use of latex polymer compositions as such, let alone in coating, caulking and roof mastic applications, or even the properties required for such applications. Therefore, it is evident that none of the citations qualifies as relevant prior art in the sense that the skilled person would consider it as an appropriate starting point for defining the technical problem; consequently, their disclosures could not render the claimed subject-matter obvious.

11. Even if D7 would be regarded as the closest document for the sole reason that the latex compositions it describes contain most of the features of the latex compositions now under discussion, as the Appellant did during the oral proceedings, one would not come to another conclusion.

11.1 According to the patent specification (page 2, lines3 to 6 and page 3, lines 40 to 42) and the comments given by the Respondent during the oral proceedings, the technical problem underlying the patent in suit is to provide latex polymer compositions useful as coating, caulking and roof mastic compositions and which show the specific balance of properties mentioned above (cf. point 10.1).

11.2 According to the patent in suit this problem is solved by the two stage polymerisation process as defined in Claim 1, which results in the polymer particles containing two separate domains of polymer as defined in Claim 10.

11.3 The examples and comparative examples in the patent, as well as the micrographs filed with the Respondent's (then Applicant) letter dated 14 April 1993, show that the various aspects of the above-defined problem are effectively solved. In particular, the comparison, in the patent in suit (page 19, line 55 to page 23, Table II), between a film made from an emulsion prepared by a method within the terms of Claim 1 and various films made from products prepared by conventional methods (Comparative Examples 1 to 3) clearly shows the superiority of the former as far as resistance to acetone, hardness, surface and tensile strength are concerned. Moreover, it has been shown that the latex compositions according to the invention lead to satisfactory results in basecoat and in roof mastic applications (patent specification, pages 36 to 39).

11.4 The polymers of D7 are derived mainly from methyl methacrylate, styrene, substituted styrenes or acrylonitrile and are said to have improved resistance to breakage on impact and articles moulded from those polymers to have a reduced tendency to craze on exposure to aqueous detergents and to have excellent stability to outdoor exposure (page 1, line 55 to page 2, line 1). However, D7 concerns polymer powders and granules which, after separation from the aqueous phase, are processed by extrusion or injection moulding (page 6, lines 38 to 66); no mention is made of the application of the latex polymer compositions as such, nor of their suitability for coating, caulking or roof mastic applications. This is also illustrated by the table on page 9, which summarises the properties of the moulded products of the polymer made in Example IV; a

closer examination of those properties shows that they have little in common with the properties required in combination for the applications envisaged in the patent in suit. Therefore, D7 by itself cannot render the claimed subject-matter obvious.

11.5 D3 discloses a two stage polymerisation process in which polystyrene seed particles are swollen to equilibrium saturation with a second charge of monomer, mainly styrene, which after polymerisation does however not result in a uniform distribution of the second polymer within the first polymer particles as achieved in the claimed process, but rather in core/shell particles (page 143, synopsis). This document concerns an analysis of the distribution and formation of second stage polystyrene in first stage polystyrene seed particles. It is completely silent about any application at all of the latex compositions thus formed.

11.6 In the light of the above, the skilled person would not have had any incentive to combine D3 with D7 in order to arrive at the desired result, nor would any combination have led to the subject-matter now being claimed.

12. Therefore, the Board concludes that the process according to Claim 1 and the product according to Claim 10 involve an inventive step.

13. As Claims 1 and 10 of the main request are allowable, the same goes for dependent Claims 2 to 9 and Claim 11, which are directed to preferred embodiments of the process according to Claim 1 and the use of the product of Claim 10 or as obtained by a method as claimed in any other claim, respectively, the patentability of which is supported by that of the independent claims to which they append.

14. Since the Respondent's main request is allowed, the auxiliary request need not be considered.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to maintain the patent as amended in the following version:

   Claims 1 to 11 as submitted during the oral proceedings dated 24 April 1997,

   Description pages 2 to 41 as annexed to the decision under appeal with the proviso that page 3C is replaced by the version as submitted during the oral proceedings dated 24 April 1997.

The Registrar: The Chairman:

E. Görgmaier C. Gérardin