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D E C I S I O N
of 18 August 1998

Case Number: T 0579/94 - 3.3.3

Application Number: 88115551.9

Publication Number: 0309903

IPC: C08L 21/00

Language of the proceedings: EN

Title of invention:

Epoxide and rubber based curable compositions having good
adhesion direct to metal

Patentee:

PPG Industries, Inc.

Opponent:

Henkel Teroson GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 101(2), 107, 56
EPC R. 58(2), 66(1)

Keyword:

"Main request - Reformatio in Peius - refused"
"Auxiliary request - inventive step (yes)"

Decisions cited:

G 0009/92, G 0004/93

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0579/94 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 18 August 1998

Appellant:
(Opponent)

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Respondent:
(Proprietor of the patent)

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Decision under appeal:

Interlocutory decision of the Opposition Division
of the European Patent Office dated 5 May 1994,
issued in writing on 26 May 1994 concerning
maintenance of European patent No. 0 309 903 in
amended form.

Composition of the Board:

Chairman: C. Gérardin
Members: R. Young
J. A. Stephens-Ofner

Summary of Facts and Submissions

- I. The mention of the grant of European patent No. 0 309 903, in respect of European patent application No. 88 115 551.9, filed on 22 September 1988 and claiming a US priority of 28 September 1987 (US 101700) was announced on 4 December 1991 (Bulletin 91/49).
- II. Notice of Opposition was filed on 31 August 1992 on the grounds of lack of novelty and lack of inventive step. The opposition was supported *inter alia* by the documents:
- E1: US-A-4 501 853;
- and the later filed, but admitted
- E3: H. Lee, K. Neville, "Handbook of Epoxy Resins", 1967, pages 5 to 20.
- III. By an interlocutory decision which was given at the end of oral proceedings held on 5 May 1994 and issued in writing on 26 May 1994, the Opposition Division found that the patent in suit could be maintained in amended form, on the basis of a set of Claims 1 to 14 filed on 11 February 1993, subject to certain amendments effected in Claim 1 during the oral proceedings. Claim 1 as so amended reads as follows:
- "A one-package stable curable composition comprising
- (a) a non-functional polydiene
 - (b) a polyepoxide having at least two 1,2 epoxy groups
 - (c) a carboxylic acid anhydride to promote adhesion of the curable composition to metal
- characterized by comprising

- (d) a sulfur and zinc containing vulcanization system for the non-functional polydiene and the polyepoxide,

and wherein the carboxylic acid anhydride is pre-treated by heating it in the presence of a diepoxide for at least five minutes to a temperature ranging from 60° to 150°C to an apparent dissolution of the carboxylic acid anhydride in the diepoxide and the carboxylic acid anhydride remains essentially unreacted with the diepoxide."

Claims 2 to 13 are dependent claims directed to elaborations of the curable composition according to Claim 1.

Claim 14, an independent claim, is worded as follows:

"A method for preparing an adhesive bond between two surfaces to form a bonded structure by

- (A) applying to at least one of the surfaces a one-package stable curable composition according to any of claims 1 to 13
- (B) placing the second surface in contact with the applied curable composition and
- (C) at least partially curing the curable composition."

According to the decision, none of the documents cited disclosed all the features claimed in Claim 1 or Claim 14, and consequently the requirements of novelty were fulfilled. As to inventive step, E1, which was the closest state of the art, disclosed a curable adhesive and sealant composition comprising epoxy resin and vulcanised rubber particles having good flexibility and

mechanical strength when cured. There was, however, no disclosure or suggestion of solving the problem of providing a stable one-package adhesive and sealing composition having good adhesion to metals by using an **unvulcanized** polydiene, a pre-treated carboxylic acid anhydride and a vulcanisation system of sulphur and zinc to cure **both** the polydiene **and** the polyepoxide. Nor was there any hint to a pretreatment of the acid anhydride with epoxy resin wherein the anhydride remained unreacted. Thus it had not been shown that any combination, even in the light of the general technical knowledge as exemplified by E3, would result in the claimed compositions, which consequently met the requirements of Article 56 EPC.

IV. On 14 July 1994, a Notice of Appeal against the above decision was filed, together with payment of the prescribed fee.

In the Statement of Grounds of Appeal, filed on 27 September 1994, the Appellant (Opponent) argued in substance as follows:

- (a) Epoxy adhesives were known to be brittle, and the addition of larger quantities of polydienes for increasing their flexibility or elasticity was taught in E1 to result in the hardened epoxies losing strength and chemical properties. It was therefore obvious to apply simultaneous cross-linking, particularly since it was known from E3 that sulphur-containing vulcanising systems were capable of cross-linking the epoxides as well as the polydienes.

(b) Furthermore, the dissolving of solids in liquids belonged to the basic general knowledge of a chemist, and it was obvious to do this to obtain a homogeneous distribution of the anhydride in the epoxy.

(c) The examples of the patent in suit failed to provide any support for the alleged effects:

(i) Although a storage stability of up to three months was alleged for the compositions, the only concrete information given referred to a composition having stability of less than two weeks at room temperature.

(ii) Although the good adhesion to metal was attributed in the patent in suit to the presence of the pretreated carboxylic acid anhydride, comparable compositions without anhydride showed Lap Shear Strengths which were the same within experimental error.

(iii) Although it was stated that the compositions according to the patent in suit were curable both at very high and very low temperatures to give comparable physical properties, this was contradicted by the exemplified results, which showed an almost 50% increase in Lap Shear Strength at a higher curing temperature.

Hence, the subject-matter of the patent in suit did not involve an inventive step.

In connection with point (c)ii), the Appellant referred for the first time to European patent No. 0 309 904 of even date.

V. The Respondent (Patentee) argued, in a submission filed on 25 March 1995, substantially as follows:

- (a) Neither in the uncured composition nor in the final cured adhesive according to the patent in suit were any dispersed vulcanised rubber particles present in a matrix resin. The difference from E1, which dealt with the improvement of conventionally cured epoxy resin compositions by inclusion of vulcanised rubber particles in a matrix resin by a conventional impact strength modifier, was not only in the steps of preparation, but also in the resulting structure of the final cured adhesive.
- (b) There was no idea derivable from E1 to modify the curable composition by avoiding vulcanising of the dispersed liquid rubber, which was incompatible with the epoxy resin, to obtain a storage stable one-pack composition.
- (c) The citation of a particular passage in E3 had been taken out of context in a hindsight approach. Although it stated that vulcanisation of rubbers might form intermediates capable of reacting with at least some types of epoxy groups, thus introducing the epoxies into the cured network, there was no general teaching to cure epoxy resins by a sulphur and zinc containing vulcanisation system. This was therefore a different kind of modification of an epoxy resin, and did not add any disclosure which was relevant for the interpretation of E1.

VI. With a communication accompanying a summons to oral proceedings, issued on 29 May 1998, the Board raised certain objections, in particular under Articles 123(2) and 84 EPC against the claims and description.

VII. The Appellant filed, on 1 July 1998, two amended sets of claims forming a new main request (Claims 1 to 14) and an auxiliary request (Claims 1 to 13), respectively.

These were followed, on 7 August 1998, by two further sets of claims labelled "Further Auxiliary Request A" and "Further Auxiliary Request B", respectively.

(i) Main request

Claim 1 reads as follows:

"A one-package stable curable composition comprising

- (a) a non-functional polydiene,
- (b) a polyepoxide having at least two 1,2 epoxy groups,
- (c) a carboxylic acid anhydride to promote adhesion of the curable composition to metal, characterized by comprising
- (d) a sulfur and zinc containing vulcanization system for the non-functional polydiene and the polyepoxide,

and wherein the carboxylic acid anhydride is pre-treated by heating it in the presence of a diepoxide for at least five minutes at a temperature ranging from 60° to 150°C to an apparent dissolution of the carboxylic acid anhydride in the diepoxide and the carboxylic acid anhydride remains essentially unreacted with the diepoxide."

Claim 2, an independent claim, reads as follows:

"A one-package stable curable composition comprising

- (a) a non-functional polydiene,
- (b) a polyepoxide having at least two 1,2 epoxy groups,
- (c) a sulfur and zinc containing vulcanization system for the non-functional polydiene and the polyepoxide, and
- (d) an anhydride adduct comprising the reaction product of a carboxylic acid anhydride to promote adhesion of the curable composition to metal with an olefinically unsaturated material."

Claims 3 to 13 are directed to elaborations of the composition according to Claim 1 or 2.

Claim 14, an independent claim, is directed to a method for preparing an adhesive bond between two surfaces using the composition according to any of Claims 1 to 13, and has the same wording as Claim 14 underlying the decision under appeal.

(ii) Auxiliary request

Claim 1 is identical with Claim 1 of the main request.

There is no independent Claim 2. Claims 2 to 12 are dependent claims directed to elaborations of the one-package stable curable composition according to Claim 1.

Claim 13, an independent claim, corresponds, *mutatis mutandis* to Claim 14 of the main request.

VIII. Oral proceedings were held on 18 August 1998. After a discussion as to the admissibility of the requests of the Respondent, and an adjournment for deliberation by the Board, the decision was announced that the main request had been refused. In relation to the auxiliary request, the parties essentially repeated verbally the arguments already submitted in writing on the substantive issue. Following deliberation of the Board, the parties were informed of the provisional intention of the Board to accept the claims of the auxiliary request filed on 1 July 1998, subject to the filing, by the Respondent, of a clearly acceptable description adapted to these claims. The Respondent then filed an amended description during the oral proceedings.

IX. The Appellant requested that the decision under appeal be set aside, and the patent in suit revoked in its entirety.

The Respondent requested that the decision under appeal be set aside, and the patent be maintained on the basis of the main or auxiliary request filed on 1 July 1998. No further reference was made to "Further Auxiliary Request A" or "Further Auxiliary Request B" (Section VII., above).

Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of amendments*
 - 2.1 Main request

According to the decisions of the Enlarged Board of Appeal, G 0009/92 and G 0004/93 (OJ EPO 1994, 875), if the opponent is the sole appellant against an interlocutory decision maintaining a patent in amended form, as in the present case, the patent proprietor is primarily restricted during the appeal to defending the patent in the form in which it was maintained by the Opposition Division in its interlocutory decision. Amendments proposed by the patent proprietor as a party to the proceedings as of right under Article 107, second sentence, EPC, may be rejected as inadmissible by the Board if they are neither appropriate nor necessary, which is the case if the amendments do not arise from the appeal, pursuant to Article 101(2) EPC, and Rules 58(2) and 66(1) EPC (Reasons for the decision, point 15).

- 2.1.1 In this connection, the set of claims corresponding to the main request contains an additional independent claim (Claim 2) which was not present in the version underlying the decision under appeal, and in which the limitation of the pretreatment of the carboxylic anhydride by heating it in the presence of a diepoxide to an apparent dissolution of the carboxylic acid anhydride in the diepoxide, has been omitted. The scope of this set of claims is thus broader than that of the

set of claims underlying the decision under appeal. Consequently, the new set of claims, if admitted by the Board, would result in a contravention of the principle of "Reformatio in Peius" set out in the decision of the Enlarged Board referred to above.

2.1.2 The argument of the Respondent at the oral proceedings, that the new independent claim had been introduced in response to an objection, under Article 123(2) EPC, to a dependent claim of the set of claims underlying the decision under appeal, whilst certainly providing an explanation of why the amendment was made, does not, in the Board's view, justify a departure from the principles referred to above, particularly since this was not the only possible way of meeting the official objection.

2.1.3 Consequently, the main request was refused.

2.2 Auxiliary request

Claim 1 corresponds to Claim 1 underlying the decision under appeal, apart from (i) the insertion of appropriate punctuation marks (commas) at the ends of lines and (ii) the amendment, following the specific objection of the Board (communication dated 29 May 1998, "preliminary observations", point 1) of the phrase "heating to a temperature ranging from 60° to 150°C" to "heating at a temperature ranging from 60° to 150°C". This amendment finds a basis in the documents of the application as filed (page 7, lines 13 to 16) as well as in the patent as granted (page 4, lines 38 to 40).

Claims 2 to 9 and 10 to 13 correspond to Claims 2 to 9 and 11 to 14 respectively underlying the decision under appeal.

No objection has been raised under Article 123(2) or 123(3) EPC against these claims and the Board sees no reason to take a different view. Consequently, no objection under Article 123 EPC arises in respect of the claims of this request.

The text of the description, which is made up of pages 2, 2a, 2b, 3, 4, 5, 6 and 7 filed during the oral proceedings corresponds to that underlying the decision under appeal except for necessary amendments consequential upon the amendment of the claims. No objection was raised, or, in the Board's view arises, in respect of this description, which is therefore regarded as clearly allowable.

3. *The patent in suit; the technical problem*

The patent in suit is concerned with compositions suitable for use as adhesives and sealants, and relates in particular to a one-package stable curable composition comprising:

- (a) a polydiene;
- (b) a polyepoxide having at least two 1,2 epoxy groups; and
- (c) a carboxylic acid anhydride (Claim 1).

Such a composition is, however, known from E1, which was generally agreed to represent the closest state of the art.

- 3.1 According to E1, there is disclosed a curable epoxy resin adhesive and sealant composition comprising an epoxy resin and vulcanised rubber particles, wherein the rubber particles have been vulcanised by a

vulcanising system (e.g. sulphur and zinc; column 4, lines 23 and 29 to 30; Examples 12 and 13) with the epoxy resin remaining uncured at the time of vulcanisation (Claim 1; column 2, lines 53 to 60).

The cured rubber may be a polydiene rubber which preferably has a functional group capable of bonding with the epoxy resin, and should be incompatible with the epoxy resin (column 3, lines 31 to 65). An acid anhydride may be present as curing agent for the epoxy resin (column 6, lines 17 to 24).

3.2 According to a typical example, a composition comprising:

Epoxy resin (Epikote 1001)	100g
Liquid rubber (Hycar CBTN 1300 X 8)...	10 g
Vulcanizing agent: sulphur powder.....	1 g
zinc oxide	0.4 g
stearic acid	0.2 g
Vulcanization accelerator (2 components)	1.0 g

is formed by adding the liquid rubber having been treated with the vulcanising ingredients to the liquid epoxy resin at 150°C with vigorous stirring with a homomixer (2 000 to 10 000 rpm) and allowing to react for 30 min., the resulting particle size of the vulcanised rubber being 0.5 to 2µm (Example 12 in conjunction with Example 1).

A heat-curable one-pack type adhesive can be prepared by mixing the above composition 50:50 with the following ingredients (column 10, lines 14 to 55; "Experiments", Table 1, Example 12):

Epoxy resin (Epikote 828).....	50 pbw
Dicyandiamide.....	5 pbw
Curezole 2P4MHZ (2-phenyl-4-methyl-5-hydroxymethylimidazole).....	4 pbw
anhydrous silicic acid.....	3 pbw
Al powder.....	80 pbw

On coating steel panels according to JIS G3141, curing at 150°C for 30 min. and subjecting to a T-peel test, a T-peel strength of 8.0×10^3 N/m is obtained.

Such compositions, whilst showing good flexibility and mechanical strength when cured (col. 2, lines 20 to 22), have not been shown to be capable of meeting the diversity and disparity of adhesive/sealant requirements associated with automobile manufacture, and in particular to have a wide latitude of cure temperatures with the ability to cure both at relatively low and relatively high temperatures and adhesion to differing substrates, together with storage stability.

3.3 Compared with this state of the art, the technical problem objectively arising may be seen as the search for a single "all-round" curable composition having a wide latitude of curing temperatures, capable of achieving comparable physical properties at both extremes, and displaying excellent adhesion to substrates, especially metals, whilst being storage stable (patent in suit, page 2, lines 10 to 20).

3.4 The solution proposed according to Claim 1 of the patent in suit is:

- (i) to provide the rubber ingredient in unvulcanised form, for simultaneous vulcanisation with the epoxy resin on curing, using a sulphur and zinc containing vulcanising system for both rubber and epoxy;
- (ii) the rubber being a non-functional polydiene; and
- (iii) adding, as a further ingredient promoting adhesion to metal, a carboxylic acid anhydride which has been pretreated by heating in the presence of a diepoxide for at least five minutes at a temperature ranging from 60° to 150°C to an apparent dissolution of the anhydride, whereby the latter remains essentially unreacted with the diepoxide.

3.5 It can be seen from the description that the compositions according to the patent in suit are stated to be capable of being cured within a range of from 104° to 288°C for a time of about 10 to about 60 minutes, in particular by baking at a temperature between 163° and 204°C for from 15 to 30 min., whilst achieving comparable physical properties at both extremes, as well as having outstanding adhesion to a variety of substrates, especially metals, and particularly oily metal. They are also stated to have a package stability for prolonged periods of up to three months (page 5, lines 37 to 50). It can furthermore be seen from the illustrative Example, that a composition according to the patent in suit achieves a Lap Shear Strength of between 1.9 and 2.8 newtons/mm² at curing temperatures between 110°C and 205°C, a T-peel strength (ASTM D1876) of 2.6 kilonewtons/m, an elongation of 180% and a tensile strength of 3.5 newtons/mm² (Example 1, pages 6, 7).

In this connection, whilst the T-peel values achieved according to the patent in suit are numerically smaller than those quoted in E1, the measurement standard is different in each case (JIS vs ASTM). Consequently it cannot be concluded that the values obtained according to the patent in suit are worse than those according to E1.

3.5.1 The argument of the Appellant concerning the variation of the Lap Shear Strength, which showed an almost 50% increase at a higher curing temperature (section IV.(c)iii), above), is irrelevant, since there is no indication in E1 of the extent of variation of Lap Shear Strength at different curing temperatures. In any case, such an argument does not demonstrate that the minimum such strength achieved is below the useful threshold (page 2, lines 12 to 15). The onus of proof was, however, on the Appellant, to show that the variation in strength was less acceptable than that of the closest state of the art, in the context of the relevant use. This onus has not been discharged. Consequently, it must be assumed that the curing behaviour at the various curing temperatures provides an adequate alternative.

3.5.2 The argument of the Appellant concerning storage stability is no longer applicable (section IV.(c)i), above), since the offending example, which related to a different composition, has been deleted. For the rest, no evidence of deficient shelf stability has been filed, although the onus was on the Appellant to show this. Consequently, there is no basis for doubting the statements in the patent in suit.

3.5.3 Finally, the allegation of the Appellant, that the presence of the pretreated carboxylic acid anhydride did not promote adhesion to metal (section IV.(c)ii), above), was based on a comparison with a composition

exemplified in another document (EP-A-309 904). Whilst this document is admittedly from the same Applicant, and even has the same filing date as the patent in suit, the exemplified composition referred to (Example 1) is not otherwise identical with that of the patent in suit. Consequently, there is no convincing basis for doubting the statement in the patent in suit that this component does indeed contribute to promoting the adhesion of the composition to metal (page 4, lines 19 to 20).

3.5.4 In the light of the above, the Board finds it plausible that the claimed measures provide an effective solution of the stated problem.

4. *Novelty*

It was explicitly admitted by the Appellant at the oral proceedings before the Board, that none of the cited documents disclosed feature iii) of the solution of the technical problem (section 3.4, above). Nor does the Board see any reason to take a different view. Consequently, the claimed subject-matter is held to be novel.

5. *Inventive step*

In order to assess the question of inventive step, it is necessary to pose the question whether the measures (i), (ii) and (iii) forming, in combination, the solution of the relevant technical problem, would suggest themselves to the skilled person, starting from E1, and searching for an alternative, storage stable "all-round" sealant adhesive suitable for use in automobile production.

5.1 It is an essential requirement of the adhesives of E1, that the rubber is vulcanised **before** the epoxy resin is cured. This "designed in" incompatibility between the rubber component and the epoxy resin has profound implications for the nature and extent of any "modifications" which might be considered by the skilled person.

5.1.1 Firstly, there is no suggestion in E1 that curing could be carried out at widely varying temperatures. On the contrary, whilst a relatively restricted range of 130° to 170°C is disclosed for the rubber vulcanisation (column 5, lines 22 to 28), curing of the epoxy component according to the examples is carried out only at 150°C. The fact that, according to E1, there are two different curing steps would, in the Board's view, in any case stand in the way of developing a modification with a single, but widely variable curing temperature.

5.1.2 Furthermore, whatever modifications the skilled person might contemplate making in the composition according to E1, the one feature he would not, in the normal course of development work, consider altering, is the obligatory incompatibility of the epoxy and rubber, and in particular the pre-vulcanisation of the latter. This is because the consequence(s) of changing a feature so essential to and definitive of the compositions according to E1 could not, even in principle, be remotely predicted. Consequently, there is no hint in E1 to carry out step (i) of the solution of the stated problem.

5.1.3 Quite apart from the above, the preferred liquid rubber component according to E1 has a functional group capable of bonding with the epoxy resin at one or both terminals and/or intermediate of the chain of the

polymer or copolymer (column 3, lines 51 to 61). Consequently, there is no incentive for the skilled person to choose a less preferred non-functional polydiene in accordance with step ii) of the solution of the stated problem.

5.1.4 Finally, E1 discloses a carboxylic anhydride only in terms of being a curing agent for the epoxy resin component. It would therefore be expected by the skilled person to be consumed during the curing reaction. In particular, there is no mention of the presence of such an anhydride as an adhesion promoting agent, let alone of it being dissolved in an epoxy resin by heating. Consequently, there is no hint arising from E1 to carry out step (iii) of the solution of the stated problem.

5.1.5 In summary, the disclosure of E1 gives no hint to any of the measures forming the solution of the technical problem.

5.2 According to E3 (page 16-16, "Natural and Synthetic Rubbers"), which is an excerpt from a standard work on epoxy resins, "Natural and most synthetic rubbers, such as styrene-butadiene and acrylonitrile-butadiene polymers, contain no groups normally reactive with the epoxy groups directly but they do contain reactive unsaturation. The unsaturation may be epoxidised with peracids..., or the unsaturated material may be used in blend with an epoxy resin. During the process of vulcanisation by sulfur, thiol groups may be developed which are capable of reacting with at least some types of epoxy groups, thus introducing the epoxies into the cured network... . Typical is the coreaction of gum nitrile stocks with DGEBA (mol. wt. 900), giving properties as indicated in Tables 16-19 and 16-20. With SBR polymers compatibility toward DGEBA resins is enhanced through the addition of an alkyraniline... ."

In the above quotation, DGEBA stands for diglycidyl ether of bisphenol A, and SBR for styrene-butadiene rubber.

- 5.2.1 Whilst the relevant entries in Tables 16-19 and 16-20 admittedly show extremely high values of tensile strength and elongation of the products of "Gum nitrile rubber stock" and DGEBA, cured with a zinc and sulphur containing curing agent, there is no indication of adhesive strength. Consequently, the skilled person seeking an alternative adhesive would not regard the teaching of E3 as relevant to the solution of the technical problem.
- 5.2.2 Even if the skilled person were nevertheless to attempt to make use of the teaching of E3 in this respect, the "gum nitrile rubber stock" used in Table 16-19 does not correspond to the required non-functional polydiene. Furthermore, it is implicit in the reference, in the next sentence, to SBR polymers (which could be non-functional), that the principal result of introduction of epoxies into the cured network is to improve "compatibility" toward DGEBA resins. This is, however, diametrically opposed to the teaching of E1 which, as stated above, requires incompatibility with the epoxy resin as a pre-requisite of the polydiene component. Consequently, the skilled person would have no incentive to combine the disclosures of E1 and E3.
- 5.2.3 Finally, if the skilled person were nevertheless not only closely to consider the teaching of E3, in spite of its apparent non-relevance (section 5.2.1, above), and furthermore to utilise its teaching to modify the essential teaching of E1, in spite of the lack of

combinability (section 5.2.2, above), the result would still not correspond to the solution of the stated problem, because there is no suggestion in either document, or elsewhere, to carry out step (iii) of the solution.

- 5.2.4 The argument of the Appellant, that it belonged to the basic general knowledge of the skilled person to carry out the anhydride pre-treatment step, was unsupported by any documentary reference, or indeed any other evidence. Even if this deficiency were overlooked, however, there was still no reason why the skilled person should associate such a step with providing enhanced adhesion to metal (cf. section 3.5.3, above).
- 5.2.5 Consequently, the solution of the stated problem does not arise in an obvious way from a consideration of the disclosures of E3 and E1 in combination.
- 5.3 In other words, the subject-matter of Claim 1 involves an inventive step in the sense of Article 56 EPC. This conclusion is equally valid for the subject-matter of independent Claim 13, since this requires, as an essential feature, the application of the composition according to Claim 1. By the same token, the subject-matter of Claims 2 to 12, which are directly or indirectly dependent upon Claim 1, also involves an inventive step. Consequently, the auxiliary request is allowable.

Order

For these reasons it is decided that:


1. The decision under appeal is set aside.

2. The case is remitted to the Opposition Division with the order to maintain the patent on the basis of Claims 1 to 13 filed on 1 July 1998 as Auxiliary Request and the description being pages 2, 2a, 2b, 3, 4, 5, 6, and 7 submitted during oral proceedings.

The Registrar:


E. Gorgmaier

The Chairman:


C. Gérardin

