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D E C I S I O N
of 30 January 1997

Case Number: T 0472/94 - 3.3.3

Application Number: 86902173.3

Publication Number: 0217861

IPC: C08L 33/02

Language of the proceedings: EN

Title of invention:

Pressure-sensitive adhesives based on similar polymers

Patentee:

EVERY DENNISON CORPORATION

Opponent:

BASF Aktiengesellschaft, Ludwigshafen

Headword:

-

Relevant legal provisions:

EPC Art. 56, 114(1)

Keyword:

"Inventive step (yes) - non-obvious solution of one aspect of the existing problem (Reasons 4.3.3.3)"
"New document (admitted) - admission in view of relevance - remittal to first instance (Reasons 6 and 7)"

Decisions cited:

G 0009/91, G 0010/91, G 0001/95, G 0007/95, T 1002/92

Catchword:

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Case Number: T 0472/94 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 30 January 1997

Appellant:
(Opponent)

BASF Aktiengesellschaft, Ludwigshafen
-Patentabteilung - C6-
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Representative:

-

Respondent:
(Proprietor of the patent)

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Representative:

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Decision under appeal:

Interlocutory decision of the Opposition Division
of the European Patent Office posted 13 May 1994
concerning maintenance of the European patent
No. 0 217 861 in amended form.

Composition of the Board:

Chairman: C. Gérardin
Members: P. Kitzmantel
J. A. Stephens-Ofner

Summary of Facts and Submissions

- I. European patent application No. 86 902 173.3, based on International application PCT/US86/00526, in the name of AVERY INTERNATIONAL CORPORATION which had been filed on 12 March 1986, claiming priority from a US application filed on 14 March 1985, resulted in the grant of European patent No. 217 861 on 18 September 1991, on the basis of 11 claims, independent Claims 1, 9 and 11 reading as follows:

"1. A pressure-sensitive adhesive composition comprising in combination, a high-molecular-weight alkyl acrylate polymer having a molecular-weight greater than 10 times the entanglement molecular-weight of the polymer and/or a weight-average molecular weight of at least 10^5 , and containing at least 70 percent by weight of an alkyl acrylate having from 2 to 4 carbon atoms on the alkyl side chain, and from 40 percent by weight to 80 percent by weight of a low-molecular weight alkyl acrylate polymer, based on the total weight of said high-molecular-weight alkyl acrylate polymer and said low-molecular-weight alkyl acrylate polymer, said low-molecular-weight alkyl acrylate polymer being formed of an alkyl acrylate identical to the alkyl acrylate of said high-molecular-weight alkyl acrylate polymer, having a molecular weight of less than 2 times the entanglement molecular-weight of the polymer and/or a weight-average molecular weight of less than 2×10^4 , and containing at least 70 percent by weight of the alkyl acrylate, the comonomer contents of said high-molecular-weight alkyl acrylate polymer and said low-molecular-weight alkyl acrylate polymer differing by no more than 10 pe[r]cent by weight."

"9. A pressure-sensitive adhesive composition comprising a high-molecular weight alkyl acrylate polymer comprised of at least 70 percent by weight ethyl acrylate, said high-molecular-weight alkyl acrylate polymer having a molecular-weight which is at least 10 times the entanglement molecular-weight and/or a weight-average molecular weight of at least 10^5 , and a low-molecular-weight alkyl acrylate polymer having a molecular-weight of less than 2 times the entanglement molecular-weight and/or weight-average molecular weight of less than 2×10^4 , and containing at least 70 percent by weight ethyl acrylate, the balance of said low-molecular-weight alkyl acrylate being present in a concentration of from 40 to 80 percent by weight, based on the total weights of the high-molecular-weight alkyl acrylate and the low-molecular weight alkyl acrylate polymer, and providing a composition having a glass-transition temperature of at least 40°C below use temperature, said high-molecular-weight alkyl acrylate polymer and/or said low-molecular-weight alkyl acrylate polymer containing an interpolymer amount of at least one unsaturated carboxylic acid."

"11. An alkali-removable pressure-sensitive adhesive composition comprising a high-molecular-weight copolymer of ethyl acrylate and acrylic acid, said high-molecular-weight copolymer containing 96 percent by weight ethyl acrylate and 4 percent by weight acrylic acid and having a molecular-weight greater than 10 times the entanglement molecular weight and/or weight-average molecular weight of at least 10^5 , in combination with a low-molecular-weight copolymer of ethyl acrylate and acrylic acid containing 88 percent by weight ethyl acrylate and 12 percent by weight acrylic acid, said low-molecular-weight copolymer having a molecular-weight of less than 2 times the

entanglement molecular-weight and/or weight-average molecular weight of less than 2×10^4 , said pressure-sensitive-adhesive composition having a glass-transition temperature of at least 40°C below the use temperature thereof."

II. Notice of Opposition requesting revocation of the patent in its entirety on the grounds of Article 100(a) and (b) EPC was filed by BASF AG on 14 April 1992, relying inter alia on

D1: Handbook of Pressure Sensitive Adhesive Technology, edited by D. Satas, New York 1982, Chapter 13: Acrylic Adhesives, pages 310 to 313; and

D2: Brooks, T.W., Kell, R.M., Boss, L.G. and Nordhaus, D.E., Proc. 1984 PAPPI Polymers, Laminations and Coatings Conference, pages 469 to 477, Boston, September 24-26.

III. By its interlocutory decision announced orally on 26 April 1994 and issued in writing on 13 May 1994 the Opposition Division held that there were no valid grounds of opposition against the patent as amended during the opposition proceedings.

The amendments consisted essentially in the substitution in Claims 1, 9 and 11 of the terms "and" for the terms "and/or", situated between the molecular weight definitions directed to the "entanglement-molecular weight" and the "weight-average molecular weight" in all statements defining the molecular weight of the high as well as of the low molecular weight acrylate polymer.

The Opposition Division held that these amendments rendered consideration of the ground of opposition under Article 100(b) EPC unnecessary.

With respect to the objections under Article 100(a) EPC the decision of the Opposition Division found that document D1 was to be regarded as closest prior art because it disclosed pressure sensitive adhesives (hereinafter "PSAs") comprising blends of polyacrylates of different molecular weights providing a certain balance between adhesive and cohesive properties. Since, however, D1 failed to disclose the specific features selected in the contested patent, it would not suggest the measures taken by the invention in order to solve the existing problem, namely to provide a polyacrylate based PSA having a wide range of adhesive properties, being resistant to bleeding and, depending on the formulation, removable by alkali. Document D2 did also not offer any relevant suggestion to the person skilled in the art, since it was not only silent about the molecular weight distribution and the respective amounts of the acrylate polymers to be used in combination as PSA, but pointed even at distinctive advantages, concerning the balance of adhesive and cohesive properties, of PSAs manufactured from a single polyacrylate over PSAs prepared by blending two polyacrylates of different molecular weights.

The appealed decision held therefore that the subject-matter of Claim 1, as well as that of Claims 9 and 11 which relied on the same selection of molecular weights and component specifications as Claim 1, was non-obvious over the cited prior art.

IV. On 7 June 1994 the Opponent (Appellant) lodged an appeal against the interlocutory decision of the Opposition Division and paid the appeal fee on the same day. The Statement of Grounds of Appeal was submitted on 14 July 1994.

V. Oral proceedings before the Board were held on 30 January 1997.

VI. The arguments of the Appellant (Opponent) may be summarized as follows:

(i) Having regard to the reasons of the appealed decision, the Appellant argued in his written and oral submissions that the features of Claim 1 of the patent in suit relating to the molecular weight limits, the monomer contents and the amounts of the components, which formally distinguished its subject-matter from that of document D1, have not been proved to be of critical and/or surprising technical significance. The experimental data reported in Table IV of the patent in suit merely confirmed what the person skilled in the art, being aware of the disclosure of D1 would have expected, namely that by increasing the amount of low molecular weight polyacrylate in the compositions the tack and peel properties would be improved at the expense of the shear and the bleeding resistance.

As to the use of identical alkyl acrylate monomers for the low and high molecular weight polymer components, this was a measure whose effect, namely the thereby achieved compatibility, was also obvious to the expert. All these features of Claim 1 could not, therefore, contribute to the inventivity of the claimed subject-matter.

Since the presence as comonomer of an unsaturated carboxylic acid was not a mandatory feature of Claim 1, its effect, namely the provision of alkali removability, was not part of the problem to be solved by the subject-matter claimed therein. Moreover, also this effect was obvious to the person skilled in the art.

- (ii) In his Statement of Grounds of Appeal he cited for the first time document

D5: JP-A-37 348/83

and presented a German translation thereof. He argued that D5 destroyed the novelty of the subject-matter of the patent in suit because it disclosed a PSA composition comprising a high molecular weight (meth)acrylate polymer, exemplified by a molecular weight of 450 000, and a low molecular weight (meth)acrylate polymer, possibly comprising the same monomers as the high molecular weight polymer, said low molecular weight polymer having a molecular weight of from 1000 to 50 000, exemplified by a molecular weight of 4500, the latter being used in amounts of 30, 50, 100 or 200 parts per 100 parts of the high molecular weight polymer.

The fact that the ester group of the acrylate monomers used according to D5 could comprise up to 12 carbon atoms did not imply that the adhesive properties of the polyacrylates prepared therefrom were essentially different from those used according to the patent in suit and prepared from acrylate esters the alkyl group of which comprised from 2 to 4 carbon atoms. This conclusion was supported by document

D6: Handbook of Pressure Sensitive Adhesive Technology, edited by D. Satas, New York 1982, Chapter 13: Acrylic Adhesives, pages 298, 299, 324 and 325,

according to which 2-ethyl hexyl acrylate, as well as butyl acrylate and ethyl acrylate are commonly used as monomers for polyacrylate adhesives. Therefore, all these monomers must provide tacky polyacrylates.

The Appellant also stated (cf. last paragraph of his submission of 12 June 1995) that, for the assessment of inventive step, documents D1, D5 and D6 could be combined, because they were all related to the adhesive and cohesive properties of pressure sensitive adhesives.

VII. The Respondent's (Patentee's) arguments may be summarized as follows:

- (i) With respect to document D1 the Respondent argued that, although it contained some general information concerning the influence of the molecular weight distribution on the adhesive and cohesive properties of polyacrylate based PSAs, it failed not only to disclose the critical parameters as claimed in the patent in suit, i.a. the specific amounts and specific molecular weights of the acrylate polymers to be blended, but would also not suggest that by the choice of these parameters the existing technical problem, i.e. the provision of PSAs having a wide range of adhesive properties and low bleeding out, could be solved.

- (ii) The Respondent requested that document D5 should not be admitted into the proceedings, because its disclosure was no more relevant than that of D1. Moreover, D5 was cited by the Appellant in support of an objection of lack of novelty, a ground which was not invoked in the original opposition.

As to its relevance, the Respondent stated that D5 did not disclose the features of present Claim 1

- that the molecular weight of the high molecular weight polyacrylate should be at least 100 000 and that of the low molecular weight polyacrylate less than 20 000,
- that both acrylate polymers should contain at least 70% by weight of an alkyl acrylate having from 2 to 4 carbon atoms in the alkyl side chain, and
- that the comonomer contents of the polymers should not differ by more than 10% by weight.

The statement in D5 concerning the possible use of identical monomers in both, the high and the low molecular weight polyacrylates, was also not detrimental to the novelty of the subject-matter of the patent in suit.

Furthermore, D5 permitted the use as monomers of acrylate esters having up to 12 carbon atoms in the alkyl side chain. This fact was of importance, since polyacrylates from monomers like 2-ethyl hexyl acrylate, which was exemplified in D5, led to PSAs which were inherently tacky, while both, the high and the low molecular weight C₂₋₄ alkyl acrylate polymers used according to the patent in suit were non-

tacky. D5, therefore, was concerned with *modifying* an existing tacky PSA, but could not suggest the *forming* of a tacky PSA by adding a *non-tacky* low molecular weight polyacrylate to a *non-tacky* high molecular weight polyacrylate.

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

The Respondent requested that the appeal be dismissed and the patent be maintained on the basis of Claims 1 to 11 submitted on 26 April 1994.

The Respondent also requested that the late filed document D5 should not be admitted into the appeal.

Reasons for the Decision

1. The appeal is admissible.

Issues with respect to the state of the art considered in the appealed decision

2. *Procedural matter*

From the documents cited in the opposition proceedings only document D1 was **explicitly referred to** in the written appeal proceedings. From this the Appellant evidently inferred that he need not comment upon document D2, again brought into the discussion by the Appellant only during the oral proceedings. This refusal to comment was in contrast to the fact, which was obvious in view of the appealed decision (Reasons 4.3), that, in order to construe a sensible

obviousness objection on the basis of D1, its disclosure had to be supplemented by some aspects disclosed in document D2 (cf. e.g. page 477, "Conclusion") with respect to the feature of the identity of the alkyl acrylates in the low and the high molecular weight polyacrylates specified in present Claim 1. This document had been duly cited (see paragraph II supra). So the Board will consider it.

3. *Novelty*

This ground of opposition was not raised in the previous opposition proceedings and is not at issue here. Furthermore, it was common ground between the parties that document D1, representing the closest state of the art (see following paragraph), did not disclose all features of the subject-matter of the patent in suit.

4. *Obviousness*

4.1 *Closest prior art*

Document D1 is a part of the chapter "Acrylic Adhesives" of the "Handbook of pressure-sensitive Adhesive Technology". It contains the following statements:

Page 310, lines 1 to 3:

"The increase of cohesive strength with increasing molecular weight as indicated by increased resistance to creep is, of course, expected."

Page 310, 3rd paragraph:

"The changes of pressure-sensitive properties as a function of molecular weight are shown in the generalized way in Figure 13-4. Both tack and resistance to peel increase with increasing molecular weight until a maximum is reached. The maximum is at a fairly low molecular weight and the transition of the mode of failure from cohesive to adhesive failure takes place in this region. A further increase in molecular weight causes a decrease and levelling of these properties at some value suitable for a functional pressure-sensitive adhesive. Commercial adhesives would be offered in this range of molecular weight. A good pressure-sensitive adhesive will show only minor variations of tack with increasing molecular weight in the region past the transition area. Resistance to shear increases with increasing molecular weight and levels off at a fairly high molecular weight."

Page 311, 2nd and 3rd paragraph:

"The effect of molecular weight distribution on the pressure-sensitive adhesive properties is more difficult to assess. Tack and resistance to peel at low peel rates are expected to be sensitive to the presence of low molecular weight fractions. The resistance to shear is mainly controlled by the high molecular weight fraction of the adhesive.

Molecular weight distribution of acrylic pressure-sensitive adhesives is fairly broad with a considerable low molecular weight fraction. A typical molecular weight distribution is shown in Figure 13-5. For some applications, it has been found that blending

of two polymers gives improved properties. Such blends exhibit two peaks on a molecular weight distribution curve as illustrated in Figure 13-6." (Figure 13-6 appears on page 312)

This disclosure expresses clearly that low molecular weight polyacrylates provide good adhesive properties (tack, peel), while for good cohesive properties (high values of resistance to shear) polymers of higher molecular weight are required.

D1 is totally silent on the following features of Claim 1 of the patent in suit:

- (i) the molecular weight limits of the high and the low molecular weight polymers,
- (ii) the use of an alkyl acrylate having from 2 to 4 carbon atoms in the alkyl chain,
- (iii) the minimum amount of 70 percent of this alkyl acrylate contained in the polymers,
- (iv) the range of amounts of 40 to 80 percent by weight of the low molecular weight polymer, based on the total weight of high and low molecular weight polymers,
- (v) the feature that the low and the high molecular weight polymers are formed of identical alkyl acrylates,
- (vi) the difference of not more than 10 percent by weight of the comonomer contents of the low and the high molecular weight polymers.

4.2 *Problem to be solved*

4.2.1 Problem indicated in the patent in suit

According to page 2, lines 21 to 24 and page 3, lines 10 to 12 the formulations of the patent in suit

- (a) provide without loss of compatibility a wide range of adhesive properties,
- (b) will not stain the paper facestock and,
- (c) when comprising sufficient acid functionality, can be easily removed by alkaline solutions.

4.2.2 Solution of the indicated problem

With respect to these different aspects of the stated problem the experimental data reported in Table IV of the patent in suit demonstrate the following:

ad a) Formulations which differ from one another only by the relative amounts of the low and the high molecular weight polyacrylates show with increasing proportion of the low molecular weight polyacrylate an improvement of the tack (as evidenced by "Final Tack" and "Loop Tack (PE)") and of the resistance to peel (as evidenced by "90° Peel (PE)" and "90° Peel (SS)", but a deterioration of the resistance to shear (as evidenced by "Shear (500/wk)" and "1/2" Mandrel (PE)"). This conclusion may be drawn from an overall comparison of the following Examples: 24 vs. 22, 31 vs. 30, 33 vs. 32, 36 vs. 35 and 38 vs. 37.

ad b) The staining phenomenon is said to be due to bleeding out of one component (cf. page 2, lines 11 to 13 of the patent in suit). From twenty examples in Table IV, which meet the requirements of Claim 1, i.e.

Examples 17 to 22, 25 to 30, 32, 34, 35, 37 and 39 to 42, fifteen exhibit a "Bleed Resistance at 60°C (1 week)" of "Good" or "Very Good"; the bleed resistance of five Examples is reported to be unsatisfactory ("Very Poor": Examples 18 and 32; "Poor": Examples 21, 37 and 41).

The rating of the bleeding resistance of the (comparative) examples, which are outside the scope of Claim 1 (Examples 23, 24, 31, 33, 36 and 38), all of which use less than the 40 percent by weight of low molecular weight polyacrylate required by Claim 1 (namely 25%), is reported to be "Good" or "Very Good" and at least as good as the rating of the corresponding "inventive" examples (cf. Examples 24 vs. 22, 31 vs. 30; 33 vs. 32, 36 vs. 35 and 38 vs. 37).

ad c) Concerning the desired alkali removability, no experimental data have been submitted; it is self-evident, however, that the presence of carboxylic acid functionality provides the possibility of salt formation and thus of ionic solubility.

The data reported in Table IV show, thus, that by an increase of the proportion of the low molecular weight polyacrylate in the PSA the adhesive properties (tack, peel resistance) are improved at the expense of the shear resistance.

The satisfactory rating of the bleeding resistance of 75% of the tested samples shows that this objective is also met to a large extent.

4.2.3 Assessment of the problem underlying the patent in suit with respect to D1

D1 discloses that the adhesive and cohesive properties of acrylic PSAs are dependent on the molecular weight and that by the blending of two acrylic polymers improved properties may be obtained (cf. point 4.1 above). D1 is silent on the bleeding and staining phenomenon.

Against the background of this state of the art the problem underlying the present subject-matter was, on the one hand,

(A) the putting into concrete practice of the teaching of D1 (concerning the balance between adhesive and cohesive properties) in terms of the relative proportions, of appropriate molecular weight limits and of appropriate alkyl acrylate units of the low and high molecular weight polyacrylates in their blends,

and, on the other hand,

(B) the prevention of bleeding out and thus staining of a paper facestock.

Since according to Claim 1 of the patent in suit the presence of comonomers, including unsaturated carboxylic acids, is only optional, the alkali removability of the PSAs is no part of the problem to be solved.

4.3 Assessment of inventive step

4.3.1 Features distinguishing over D1

The presence of an inventive step turns on the question whether the choice of the following features in Claim 1 (as listed in point 4.1 above) was obvious over D1, alone or in combination with any further state of the art:

- (i) the molecular weight limits of the high and the low molecular weight polymers,
 - (ii) the use of an alkyl acrylate having from 2 to 4 carbon atoms in the alkyl chain,
 - (iv) the range of amounts of 40 to 80 percent by weight of the low molecular weight polymer, based on the total weight of high and low molecular weight polymers,
- and
- (v) the feature that the low and the high molecular weight polymers are formed from identical alkyl acrylates.

The other features of Claim 1, which are not disclosed in D1, namely

- (iii) the minimum amount of 70 percent of this alkyl acrylate contained in the polymers,
- and
- (vi) the difference of not more than 10 percent by weight of the comonomer contents of the low and the high molecular weight polymers,

have only optional character and cannot, therefore, contribute to the inventivity of its subject-matter.

4.3.2 Importance of the distinguishing features for the solution of the existing technical problem

4.3.2.1 The evidence present in the patent in suit does not comprise any proof for the Respondent's allegation that the above mentioned features (i), (ii), (iv) and (v) were of critical importance with respect to aspect (A) of the existing problem (cf. point 4.2.3 above). There are no comparative examples for the assessment of the importance of the molecular weight limits (feature (i)), of the selection of C₂₋₄ alkyl acrylates (feature (ii)), and of the use of identical alkyl acrylates in the low and the high molecular weight polyacrylates (feature (v)). Having regard to feature (iv) concerning the weight ratio of the low and high molecular weight polyacrylates, the data presented in Table IV of the patent in suit are not able to prove any particular effect occurring on trespassing the 40%, respectively 80% limits specified in this feature.

4.3.2.2 On page 2, lines 21 to 22 the patent in suit states: "The [inventive] formulation is highly compatible with, and will not stain, the paper facestock." According to this statement the polymer compatibility and the staining phenomenon (corresponding to "bleeding out") are linked. Since closer structural similarity must lead to improved compatibility, feature (v) of Claim 1 of the patent in suit, according to which the low and the high molecular weight polymers are formed from identical alkyl

acrylates, must also provide improved compatibility. "Compatibility" and "identity", in the sense they are used here, are therefore directly linked to one another.

The Appellant, in the oral proceedings, questioned the existence of any correlation between compatibility and staining and pointed out that the staining effect was only related to the amount of low molecular weight polymer used in the PSA. While the data in Table IV of the patent in suit demonstrate that there is indeed a tendency towards lower bleeding out at lower proportions of low molecular weight polymer (cf. point 4.2.2 above, item "ad b")), these results do not contradict the Patentee's assertion of a correlation between staining and compatibility, because all the examples in the patent in suit have been performed with blends of low and high molecular weight polyacrylates formed from identical alkyl acrylates, including those, which because of their too low proportion of low molecular weight polymer, are not within the scope of Claim 1 of the patent in suit.

4.3.3 Obviousness over D1

4.3.3.1 In view of the fact

- first, that the person skilled in the art was aware from D1 of exactly the effects on the adhesive and cohesive properties of PSAs, comprising a blend of low and high molecular weight polyacrylates, which are demonstrated by the evidence in the patent in suit, and
- secondly, considering, that the molecular weight limits specified in Claim 1 of the patent in suit have not been shown to be of any critical importance for these properties,

the features of Claim 1 concerning the molecular weight limits (feature (i)) and the weight proportions (feature (iv)) of the two polymers must be regarded as being the outcome of routine workshop activities not involving any inventive effort.

4.3.3.2 The same conclusion applies to feature (ii). The choice of alkyl acrylates having from 2 to 4 carbon atoms in the alkyl chain as (main) monomers for the polyacrylates used in the claimed PSA's is not shown to involve any particular effect. Since ethyl acrylate and butyl acrylate are commonly used for the preparation of PSAs (cf. D1, page 311, lines 1 to 3; D2, page 470, table at bottom of left hand column), a fact that was not denied by the Respondent, their use must be regarded as either arbitrary and/or devoid of any surprising effect. This feature, therefore, is likewise not able to contribute to an inventive step of the subject-matter of Claim 1 of the patent in suit.

4.3.3.3 Feature (v), i.e. that the low and high molecular weight polymers are formed from identical alkyl acrylates, is not disclosed or suggested in D1 and this document is also silent about the bleeding out phenomenon.

In view of this prior art and in view of the Appellant's failure to refute the Respondent's assertion that feature (v) of Claim 1, i.e. the use of identical alkyl acrylates for the low and the high molecular weight polyacrylates, is responsible for the good bleeding out resistance of the PSAs (aspect (B) of the existing problem), the provision of that feature in the PSA compositions specified in Claim 1 of the patent in suit was non-obvious.

4.3.3.4 It remains to be decided whether any further state of the art in combination with D1 renders obvious the solution of this aspect (B) by feature (v) of Claim 1 of the patent in suit.

Document D2 was cited by the Appellant in order to support his contention that the person skilled in the art was aware that the adhesive properties of PSAs formed from blends of different polyacrylates would be better if the blended species are structurally very similar (cf. D2, "Conclusion" on page 477, first sentence). The meaning of the term "adhesive properties" in this passage is exemplified in Figures 1, 2 and 3 on page 471, where peel, loop tack and shear are discussed. Bleeding out and staining are not among the properties which are referred to in D2.

This document is therefore no help to the skilled person wishing to solve aspect (B) of the existing technical problem, i.e. the prevention of bleeding out and thus staining of paper facestock, and he, therefore, had no reason to combine its disclosure with that of D1, all the more as this document ultimately militates against the use of blends of polymers and, in order to optimize the adhesive properties, recommends the use of single polymers (cf. D2, page 472, left hand column, last sentence above Table 1).

4.3.4 Therefore the Board decides, that, with respect to the disclosure of document D1, taken alone or in combination with D2, the solution of aspect (A) of the existing problem by features (i), (ii) and (iv) of Claim 1 was obvious, while the solution of aspect (B) of the existing problem by feature (v) was not.

4.3.5 As far as the subject-matter of Claim 1 is concerned, the disclosure of documents D1 and D2, therefore, does not prejudice the maintenance of the patent.

4.3.6 No arguments have been brought forward by the Appellant with respect to the subject-matter of the further independent Claims 9 and 11, which are i.a. restricted to the use of ethyl acrylate in both the low and the high molecular weight polyacrylates. With respect to the obviousness of this feature in these claims, which is in fact a specific embodiment of feature (v) of Claim 1, the same arguments apply.

Documents relied upon for the first time during the appeal proceedings

5. *Subject-matter disclosed in D5*

This document, considered in the form of its German translation, relates to polyacrylate based PSAs having good cohesive properties and an improved adhesion towards uneven surfaces (page 4, paragraph 2).

The PSAs disclosed in D5 comprise mixtures of high and low molecular weight polyacrylates, whose molecular weight ranges of at least 300000, respectively of 1000 to 50000 (Claim 1 and page 6, last two paragraphs) overlap those according to present Claim 1.

Furthermore, D5 discloses the use of acrylate ester monomers having an alkyl ester chain length of up to 12 carbon atoms which range includes the chain length of 2 to 4 carbon atoms specified in present Claim 1 (page 5, 2nd paragraph). Also in agreement with the polyacrylates used according to the patent in suit, those according to D5 may comprise comonomers, for example acrylic acid (page 5, last paragraph and page 7, 3rd paragraph). Finally, it is stated in D5 (sentence bridging pages 7 and 8) that the acrylate

monomers [used for the preparation of the low molecular weight polyacrylate component] may be the same as (or may be different from) those used for the synthesis of the [high molecular weight] acrylic polymer emulsion.

6. *Admission into the proceedings*

6.1 In spite of the Respondent's request to the contrary, document D5 is admitted into the proceedings under Article 114(1) EPC, because it is more relevant to the subject-matter of Claim 1 of the patent in suit than D1, even to the extent that it might prejudice the maintenance of the patent (cf. decision T 1002/92, OJ EPO 95, 605).

6.2 For the reasons set out below, the Board's admission of D5 is not barred, as was alleged by the Respondent, by the opinion of the Enlarged Board of Appeal in its decision G 1/95 (OJ EPO 96, 615).

6.2.1 Both G 1/95 and G 7/95 (OJ EPO 96, 626) dealt with the meaning of the term "grounds" in Article 100(a) EPC by reference to the earlier finding in G 10/91 (OJ EPO 93, 420) that fresh grounds may not, except with the Patentee's express consent, be introduced into the appeal proceedings. In the former case Article 100(a) EPC was sought to be relied upon as an "umbrella" pleading to cover new grounds in the appeal not substantiated before the first instance. The same went for G 7/95, on which the Respondent did not expressly rely but the facts of which lie closer to those in the instant case whilst the legal principles it applies are identical. Here, whilst inventive step had been pleaded and supported, novelty was neither pleaded nor supported.

6.2.2 The opposition against the patent in suit was, with respect to the grounds of Article 100(a) EPC, substantiated only with regard to the issue of lack of inventive step. However, the Enlarged Board held in point 2 of his opinion G 10/91: "Exceptionally, the Opposition Division may in application of Article 114(1) EPC, consider other grounds for opposition which, *prima facie*, in whole or in part would seem to prejudice the maintenance of the European patent."

6.2.3 In the present case it is immediately recognizable by a quick analysis of D5, that its disclosure (cf. point 5 supra) may prejudice the maintenance of the patent in suit, because of lack of novelty (particularly when taking into account the optional character of the features of Claim 1 relating to the presence of comonomers in the polyacrylates) and/or lack of inventive step of the claimed subject-matter. Both these objections had been raised by the Appellant (submission of 13 July 1994, page 1, underlined passage, and submission of 12 June 1995, page 3).

6.2.4 In such a situation the Board may, in application of the powers conferred to it by Article 111 EPC, 2nd sentence, admit the respective evidence into the proceedings.

7. *Further proceedings*

Since by the admission of D5 the factual framework of the case on the basis of which the first instance's decision had been rendered is no longer the same, the Board, again in application of the powers conferred to it by Article 111 EPC, 2nd sentence, decides to remit the case to that instance for further prosecution (cf. G 10/91 as reported in G 9/91, Reasons 18 (OJ EPO 93, 408)).

8. *Document D6*

This document was cited by the Appellant in order to complement his arguments concerning D5. Accordingly, the issue of its relevance will have to be decided during the further prosecution of the case before the first instance.

Order

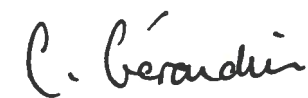
For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Opposition Division for further prosecution with particular respect to document D5.

The Registrar:


E. Gorgmaier

The Chairman:


C. Gérardin