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Datasheet for the decision of 15 September 2021

Case Number: T 1110/18 - 3.3.09

Application Number: 10703781.4

Publication Number: 2393665

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Language of the proceedings: EN

Title of invention:
RESINS FOR BULK TOPCOAT

Patent Proprietor:
Avery Dennison Corporation

Opponent:
UPM Raflatac Oy

Headword:
Resins for bulk topcoat/AVERY DENNISON

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - (no)

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Catchword:

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Beschwerdekammern

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Case Number: T 1110/18 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 15 September 2021

Appellant: (Patent Proprietor)	Avery Dennison Corporation 150 North Orange Grove Blvd. Pasadena, CA 91103 (US)
Representative:	Müller-Boré & Partner Patentanwälte PartG mbB Friedenheimer Brücke 21 80639 München (DE)
Respondent: (Opponent)	UPM Raflatac Oy Tesomankatu 31 33310 Tampere (FI)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 13 March 2018 revoking European patent No. 2393665 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	A. Haderlein
Members:	M. Ansorge
	E. Kossonakou

Summary of Facts and Submissions

I. The appeal was filed by the proprietor (appellant) against the opposition division's decision to revoke European patent EP 2 393 665.

II. With its notice of opposition, the opponent had requested that the patent be revoked, in particular on the ground for opposition under Article 100(a) EPC (lack of inventive step).

III. In the present decision, reference is made to the following documents:

D2: DSM NeoResins, Technical Information, "NeoResins products for Label Coatings", 24 pages in total
D6: WO 02/062894 A1
D36: Experimental report reworking Example 9 of D6 and Example E1 of the patent

IV. With the statement setting out the grounds of appeal, the appellant filed a main request and four auxiliary requests.

Claim 1 of the main request reads as follows:

"A printable or print receptive topcoat composition for a face material, said topcoat composition comprising:
a polyether urethane;
a polyurethane acrylate;
a crosslinker, wherein the crosslinker is contained in an amount in a range of from 2 parts to 15 parts based on 100 parts total solids; and
an anti-blocking additive."

Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the claimed topcoat composition has been limited to an aqueous dispersion, requiring the presence of water in the coating composition, and the term "comprising" has been changed to "consisting of".

Claim 1 of auxiliary request 2 differs from claim 1 of auxiliary request 1 in that it has been limited to a sheet or rolled construction and reads as follows (amendments compared with claim 1 of auxiliary request 1 are underlined):

"A sheet or rolled construction having formed on a surface thereof a printable or print receptive topcoat composition for a face material, wherein the construction includes a face material that has the topcoat composition formed on a print receiving side thereof,
said topcoat composition is an aqueous dispersion consisting of:
a polyether urethane;
a polyurethane acrylate;
a crosslinker, wherein the crosslinker is contained in an amount in a range of from 2 parts to 15 parts based on 100 parts total solids;
an anti-blocking additive; and
water."

Claim 1 of auxiliary request 3 differs from claim 1 of auxiliary request 2 in that the feature "wherein the topcoat composition is directly formed on the surface of the face material" has been introduced.

Claim 1 of auxiliary request 4 differs from claim 1 of auxiliary request 3 in that the feature "wherein the face material comprises polypropylene or a metallized paper" has been introduced.

V. The opposition division decided, *inter alia*, that the subject-matter of claim 1 of the then auxiliary request 1 before the opposition division (identical to claim 1 of the main request on appeal) did not involve an inventive step in view of D2 as the closest prior art.

VI. In the grounds of appeal, the appellant argued, amongst other things, that the claimed subject-matter involved an inventive step starting from D6 as the closest prior art, *inter alia*. In its reply to the grounds of appeal, the opponent (respondent) put forward arguments as to why, in its opinion, the claimed subject-matter also lacked an inventive step starting from D6 as the closest prior art.

VII. The board issued a communication pursuant to Article 15(1) RPBA indicating its preliminary opinion that it did not seem to be sufficiently proven that D2 had been made available to the public before the priority date of the patent, but that the subject-matter of claim 1 of the main request and auxiliary requests 1 to 4 did not appear to involve an inventive step in view of D6 as the closest prior art.

VIII. The appellant filed a reply to the board's communication, enclosing a new experimental report (D36), *inter alia*.

IX. The parties' relevant arguments, submitted in writing and during the oral proceedings before the board, are reflected in the reasoning below.

X. Requests

The appellant requested that the decision be set aside and that the patent be maintained on the basis of the main request or one of auxiliary requests 1 to 4, all filed with the statement setting out the grounds of appeal.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

MAIN REQUEST

1. Inventive step

1.1 Both parties agreed that D6 (Example 9) qualified as an appropriate closest prior-art document. The board does not see any reason to disagree with the parties in this regard.

1.2 D6 relates to a coating composition comprising at least one binder and at least one filler having a surface area of at least about 1 m^2/g and wherein a topcoat derived from the coating composition is printable with a UV curable ink-jet ink (see claim 1 of D6). Suitable binders include an aliphatic polyether polyurethane and an aliphatic urethane acrylate (see page 7, line 25 to page 8, line 18 of D6). Additives such as a wax or a crosslinker may be present (see page 26, lines 1 to 3

of D6), wherein the amount of crosslinker may be from about 0.01% to about 20% by weight of the solids of the coating composition (see page 27, lines 4 to 7 of D6). Example 9 of D6 (which is closest to the claimed subject-matter) relates to a coating composition (aqueous dispersion) comprising 70 parts of Neocryl XK-90 (45% solids; acrylic copolymer), 64 parts of NeoRez R-600 (33% solids; polyether polyurethane), 225 parts of Sylojet 710A (20% solids; silica), 6 parts of Aquacer 570 (30% solids; wax), 0.7 parts of CX-100 (100% solids; crosslinker) and 34 parts of water, wherein the solids content is 25%.

1.3 The parties agreed that the subject-matter of claim 1 of the main request differed from Example 9 of D6 in that:

- a polyurethane acrylate is used, whereas in Example 9 of D6 an acrylic copolymer (Neocryl XK-90) is used; and
- a higher amount of crosslinker is used than in Example 9 of D6.

1.4 The parties disagreed whether or not an improvement or effect originating from these differences was demonstrated over D6, however.

1.4.1 For the following reasons, an effect over D6 cannot be acknowledged.

1.4.2 The appellant argued that comparing Comparative Example CE1 in particular with Examples E1 and E10 of the patent revealed an effect over D6, in particular improved ink anchorage.

In the board's view no effect can be derived from comparing Comparative Example CE1 with Examples E1 or E10 of the patent, since additional changes have been made to the composition which do not allow these experiments to be properly compared.

For instance, Neorez R-600 is used as the polyether polyurethane in Comparative Example CE1 of the patent, whereas a different polymer (Neorez R-563) is used in Examples E1 and E10 of the patent. In addition, in Example E1 of the patent more Neorez R-563 is used than UC-7849, whereas, conversely, in Comparative Example CE1 more acrylic copolymer (XK-90) is used than Neorez R-600.

More importantly, the board is of the opinion that Comparative Example CE1 of the patent is not sufficiently in line with Example 9 of D6 to properly simulate this closest prior art.

In this context, the appellant argued that Comparative Example CE1 of the patent was a fair reproduction of Example 9 of D6 and that it was representative of this example, since the same polymers (i.e. XK-90 and Neorez R-600) were used in Comparative Example CE1 of the patent and Example 9 of D6. In its view, the presence of a wax (used in Example 9 of D6 but not in Comparative Example CE1), the differing solid content of the coating composition and the differing dry coat weight of the coating were not decisive for the desired effect, in particular improved ink anchorage.

The board is not convinced and is of the opinion that too many changes have been made to Comparative Example CE1 of the patent compared with Example 9 of D6 to

conclude that Comparative Example CE1 would be sufficiently representative of Example 9 of D6.

More precisely, a different amount of crosslinker is used in Comparative Example CE1 of the patent compared with Example 9 of D6, the coating composition in Comparative Example CE1 of the patent has a much lower solid content than Example 9 of D6, and a wax is used in Example 9 of D6 which is not used in Comparative Example CE1 of the patent. Moreover, the dry coat weight of the coating obtained in Example 9 of D6 is significantly higher than that obtained in Comparative Example CE1 of the patent. Even if the presence of a wax were not essential, as argued by the appellant, it would be concluded that Comparative Example CE1 of the patent was still not sufficiently in line with and thus not representative of Example 9 of D6. As a consequence, the comparison of Comparative Example CE1 of the patent with Examples E1 and E10 of the patent is not suitable for demonstrating an effect over D6 (Example 9). Put another way, the experimental data provided in the patent do not credibly demonstrate that an effect originating from the distinguishing features exists over D6.

1.4.3 The appellant argued that improved ink anchorage could be achieved when using a polyurethane acrylate having polymerisable acrylate end groups instead of an acrylate copolymer (not having these reactive end groups), since the polymerisable unsaturated acrylate end groups lead to improved ink anchorage due to their chemical reactivity.

The board is not convinced. The patent does not mention that the polymerisable acrylate end groups of the polyurethane acrylate necessarily lead to improved ink

anchorage. The examples and comparative examples in the patent do not support this general assumption either. As outlined above, when relying on the data provided in the patent alone, no improvement over D6 is demonstrated.

1.4.4 The appellant filed the experimental report D36, which reworked Example 9 of D6 (see Sample 1 of D36) and compared it with Example E1 of the patent (see Sample 2 of D36) to demonstrate an improvement over D6, in particular improved ink anchorage.

The respondent requested that the late-filed document D36 not be admitted into the proceedings. This issue does not need to be addressed. Even when considering this document, the board is not convinced that the experimental data provided therein are suitable for proving an effect over D6.

In the appellant's view D36 demonstrated an effect (in particular improved ink anchorage) over D6, with Sample 1 of D36 being a fair reproduction of Example 9 of D6.

For the following reasons, D36 cannot prove an effect over D6.

First of all, in Sample 1 of D36, XK-90 (which, according to the appellant, was no longer available due to the presence of APEO surfactant, which was banned by the EU) was replaced with Neocryl FL-791 (which, according to the appellant, was the same polymer as XK-90, but without APEO) and Sylojet 710A (which, according to the appellant, was also no longer available) was replaced with Syloid W500. No details concerning the solid content of Neocryl FL-791 and no

further details about Neocryl FL-791 or Syloid W500 were submitted, which leads to some ambiguity.

In the board's view, there is no experiment on file which convincingly demonstrates that an improvement exists which originates from the distinguishing features over Example 9 of D6. Numerous changes were made to Sample 2 of D36 (reworking Example E1) or Example E10 of the patent compared with Sample 1 of D36 (reworking Example 9 of D6).

More precisely, the polyether urethane Neorez R-600 (used in Sample 1 of D36 and Example 9 of D6) was again changed to Neorez R-563. In Sample 1 of D36 more XK-90 (acrylic copolymer) was used than Neorez R-600, whereas, conversely, in Sample 2 of D36, more Neorez R-563 was used than UC-7849. In addition, Aquasafe Matting Agent was used in Sample 2 of D36 (and Examples E1 and E10 of the patent), but not Sylojet 710A or Syloid W500 (mentioned in D6).

The appellant argued that the different solid contents in the coating composition and dry coat weights of the coating in Samples 1 and 2 of D36 did not affect the desired effect (in particular improved ink anchorage). The board does not concur with this view. To enable a proper or meaningful comparison of Sample 1 of D36 with Sample 2 of D36 (or Examples E1 and E10 of the patent), it is essential that, except for the distinguishing features, the same components are used and particularly that the solid content of the coating composition and the dry coat weight of the obtained coating are comparable.

As correctly pointed out by both parties, the nature of the comparison with the closest prior art must be such

that the effect is convincingly demonstrated to originate from the distinguishing features of the invention compared with the closest prior art.

In the board's view, this is, however, not derivable from the experimental data provided in the patent or in D36. It is considered to be implausible that the numerous differences identified above, in particular the different polyether polyurethanes and anti-blocking agents, the different solid contents of the coating composition, and the different dry coat weights of the obtained coating, do not have any influence on the desired properties of the coating composition or the coating produced therefrom. Therefore, the board cannot agree with the appellant in this respect, since the nature of the comparison with the closest prior art is not suitable for demonstrating that an effect exists which originates from the distinguishing features over D6.

Due to the numerous changes between Examples E1 and E10 of the patent or Sample 2 of D36 and Comparative Example CE1 of the patent or Sample 1 of D36, the experimental data provided in the patent and in D36 do not convincingly demonstrate that there is an improvement over D6 which originates from the distinguishing features.

1.5 In view of the above, an effect over D6 cannot be acknowledged, and therefore the objective technical problem to be solved is to provide an alternative topcoat composition.

1.6 With respect to the question of obviousness, the board has the following comments.

As can be taken from page 8, lines 12 to 18 of D6, the binder may be an aliphatic urethane acrylate and the crosslinker may be present in an amount of from about 0.01% to about 20% of the solids of the coating composition (see page 27, lines 4 to 7 of D6), broadly overlapping with the claimed range. In the absence of an unexpected effect resulting from the distinguishing features over D6, a skilled person would consider the distinguishing features to be a suitable solution to the less ambitious objective technical problem.

In this context, the appellant argued that an aliphatic urethane acrylate is disclosed in D6 only as an alternative to an aliphatic polyether polyurethane, the only combination of two kinds of resins being a polyurethane and an acrylate resin as described in claim 3 of D6, for instance.

While it is true that, according to a preferred embodiment of D6, the binder may be a combination of a polyurethane and an acrylate resin, the teaching of D6 is not limited to this preferred combination. D6 more broadly teaches a coating composition comprising at least one binder and at least one specific type of filler. It is clearly envisaged in D6 to consider the use of more than one binder mentioned in this document. In the absence of any improvement over D6, it is obvious for a skilled person to consider the combination of e.g. an aliphatic polyether polyurethane and an aliphatic urethane acrylate.

In addition, a skilled person would consider working within the range of the crosslinker disclosed in D6, which broadly overlaps with the range defined in claim 1 of the main request.

Therefore, the subject-matter of claim 1 of the main request does not involve an inventive step in view of D6 as the closest prior art.

AUXILIARY REQUESTS

2. Auxiliary request 1

Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the term "comprising" has been changed to the limiting term "consisting of" and in that the coating composition has been limited to an aqueous dispersion.

As a consequence, the wax (Aquacer 570) present in the aqueous dispersion according to Example 9 of D6 is now excluded from claim 1 due to the limiting formulation "consisting of", leading to another difference over Example 9 of D6; however, the presence of a wax does not have a particular impact on the properties of the coating composition, as confirmed by the appellant in the discussion of inventive step regarding the main request. More importantly, a wax is only an optional (thus not an essential) component in D6 (see page 26, lines 1 to 3 of D6). Therefore, omitting said optional component is clearly envisaged in D6.

In this context, the appellant argued that by comparing Examples E5 and E9 of the patent with Examples E1 and E10 of the patent, it had to be concluded that the topcoat composition exhibited not only improved pinholing, but also improved ink anchorage.

For substantially the same reasons as outlined above for the main request, an effect over D6 also cannot be acknowledged as far as the subject-matter of claim 1 of

auxiliary request 1 is concerned. The comparison of Examples E5 and E9 of the patent (not falling within the scope of claim 1 of auxiliary request 1, but falling within the scope of claim 1 of the main request) with Examples E1 and E10 of the patent (being in line with claim 1 of auxiliary request 1) is not suitable for demonstrating an effect over D6 either. As outlined in the assessment of inventive step for the main request, Examples E1 and E10 had already been assessed for their relevance. The fact that Examples E5 and E9 of the patent exhibit detrimental properties over Examples E1 and E10 of the patent cannot prove an effect over D6, with Examples E5 and E9 of the patent not being representative of Example 9 of D6.

Therefore, the subject-matter of claim 1 of auxiliary request 1 does not involve an inventive step in view of D6.

3. Auxiliary requests 2 to 4

3.1 In the absence of arguments from the appellant's side as to why the subject-matter claimed in auxiliary requests 2 to 4 might involve an inventive step in view of D6, the board is unable to see why the sheet or rolled construction as defined in claim 1 of each of auxiliary requests 2 to 4 might involve an inventive step in view of D6 as the closest prior art.

3.2 For the sake of completeness, it is pointed out that the subject-matter of claim 1 of auxiliary requests 2 to 4 encompasses the same aqueous dispersion (as the topcoat composition) as defined in claim 1 of auxiliary request 1.

3.3 In addition, D6 discloses a sheet construction having formed on a surface thereof a printable or print receptive topcoat composition for a face material, wherein the construction includes a face material that has the topcoat composition formed on a print receiving side thereof (see, for instance, page 25, lines 3 to 12, page 28, line 5 to page 29, line 15, and page 32, line 20 ff of D6). Consequently, the same conclusion of lack of inventive step as drawn for claim 1 of auxiliary request 1 equally applies to claim 1 of auxiliary request 2.

Therefore, the subject-matter of claim 1 of auxiliary request 2 does not involve an inventive step in view of D6.

3.4 D6 also teaches that the topcoat composition is directly formed on the surface of the face material (see, for instance, the examples in D6).

Therefore, the subject-matter of claim 1 of auxiliary request 3 does not involve an inventive step in view of D6.

3.5 As mentioned on page 25, lines 3 and 4 of D6, for instance, the topcoat composition may be applied to any substrate to make an ink receptive sheet. Polyolefin films in general are mentioned as useful substrate layers (see page 25, lines 4 to 12 of D6) and polypropylene substrates are explicitly taught in the examples (see page 35, Table 3, and page 36, under "SUBSTRATES for TOPCOATS", of D6). Therefore, selecting a face material comprising polypropylene, for instance, is taught in D6 itself.

Therefore, the subject-matter of claim 1 of auxiliary request 4 does not involve an inventive step in view of D6 either.

4. In view of the above, there is no allowable request on file.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Nielsen-Hannerup A. Haderlein

Decision electronically authenticated