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Datasheet for the decision of 15 November 2011

Case Number: T 0020/10 - 3.3.03

Application Number: 02732700.6

Publication Number: 1401907

IPC: C08G 18/42, C08G 18/72, C08G 18/79, C09D 175/08

Language of the proceedings: EN

Title of invention:
Coating composition comprising a polyisocyanate and a polyester oligomer prepared from a polyol, a poly-carboxylic acid, and a monocarboxylic acid

Patent Proprietor:
Nuplex Resins B.V.

Opponent:
BASF Coatings GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 83, 84, 123(2), 123(3)
EPC R. 80
RPBA Art. 13(1)(3)

Keyword:
-

Decisions cited:
T 0805/93, T 0608/07

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0020/10 - 3.3.03

D E C I S I O N
of the Technical Board of Appeal 3.3.03
of 15 November 2011

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 9 November 2009 revoking European patent No. 1401907 pursuant to Article 101(3)(b) EPC.

Composition of the Board:

Chairman: B. ter Laan
Members: O. Dury
C. Vallet

Summary of Facts and Submissions

I. The appeal by the patent proprietor lies against the decision of the opposition division posted 9 November 2009 to revoke European patent N°. EP 1 401 907, based on application N°. 02 732 700.6 corresponding to the international application published as WO 02/098942 A1.

II. The application as filed contained 14 claims, of which claims 1, 13 and 14 read as follows:

"1. Coating composition comprising:
A) at least one polyester oligomer prepared from reactants comprising
(a) 20-60 wt.% of at least one polyol,
(b) 5-30 wt.% of at least one polycarboxylic acid selected from the group of cyclic polycarboxylic acids, the esters or the anhydrides thereof, wherein the carboxyl groups are separated by 3 carbon atoms or less, and from the group of α,β-saturated acyclic polycarboxylic acids, the esters or the anhydrides thereof, and
(c) 20-60 wt.% of at least one monocarboxylic acid, the sum of the wt.% indicated for the reactants (a), (b), and (c) always being 100 wt.%, and the oligomer being a low-viscosity oligomer having a weight average molecular weight Mw of less than 5,000, and a hydroxyl number in the range of 200 to 400 mg KOH/g oligomer, and
B) at least one polyisocyanate."

"13. Coating composition according to any one of the preceding claims wherein the polyisocyanate is blocked".

"14. Use of the coating composition according to any one of the preceding claims in the field of finishing and refinishing of automobiles and large transportation vehicles."

Claims 2-12 were dependent claims directed to embodiments of claim 1.

III. The granted patent was based on 14 claims, wherein claim 1 corresponded to claim 1 of the application as filed however with the expression **", wherein the term "low-viscosity" relates to a viscosity less than 30 Pa.s (at 23 °C."** added directly after "B) at least one polyisocyanate" (additions as compared to claim 1 of the application as filed are indicated in **bold**).

IV. A notice of opposition against the patent was filed on 8 August 2007, in which the revocation of the patent in its entirety was requested on the grounds of Art. 100(a) EPC (lack of an inventive step) and Art. 100(b) EPC. During the opposition procedure the following documents were *inter alia* cited:

D1: Römpp Lexikon Lacke und Druckfarben, 1998, page 501

D4: Betriebsanleitung Rotationsrheometer MC1, 1997, pages 1-7

D4a: Betriebsanleitung Rotationsrheometer MC1, 1997, pages 66-70

D13: Test report filed by appellant with letter of 11 January 2008 (1 page)

D18: Rheolab MC 1 Operating Manual, 1993, Paar Physica, pages 1-50.

V. The decision of the opposition division was based on a main and one auxiliary request.

The main request was considered not admissible under Rule 80 EPC since the amendments, amongst which the deletion of claim 13 as granted, were not necessary for overcoming a ground of opposition.

Claim 1 of the auxiliary request read as follows (modification as compared to claim 1 as granted in **bold**):

"1. Coating composition comprising:
A) at least one polyester oligomer prepared from reactants comprising
(a) 20-60 wt. % of at least one polyol,
(b) 5-30 wt. % of at least one polycarboxylic acid selected from the group of cyclic polycarboxylic acids, the esters or the anhydrides thereof, wherein the carboxyl groups are separated by 3 carbon atoms or less, and from the group of α,β-saturated acyclic polycarboxylic acids, the esters or the anhydrides thereof, and
(c) 20-60 wt. % of at least one monocarboxylic acid, the sum of the wt. % indicated for the reactants (a), (b), and (c) always being 100 wt.%, and the oligomer being a low-viscosity oligomer having a

weight average molecular weight Mw of less than 5,000, and a hydroxyl number in the range of 200 to 400 mg KOH/g oligomer, and

B) at least one polyisocyanate,

wherein the term "low-viscosity" relates to a viscosity less than 30 Pa.s (at 23 °C) **and wherein the coating composition is curable at a temperature range of between 0 and 80 °C.**"

The auxiliary request was refused because it did not meet the requirements of Art. 83 EPC. The opposition division held in particular that the patent in suit did not disclose in a manner sufficiently clear and complete how the viscosity of the polyester oligomers (A) recited in claim 1 should be determined. In this respect, neither was it clear on which material the viscosity measurement was to be performed, nor under which conditions, in particular regarding the type of spindle and the shear rate to be used. The patent in suit was therefore revoked.

VI. On 8 January 2010, the patent proprietor (appellant) lodged an appeal against the above decision. The prescribed fee was paid on the same day. In its statement of grounds of appeal filed on 19 March 2010 the appellant requested that the decision of the opposition division be set aside and the patent in suit be maintained on the basis of the main or any of auxiliary requests 1-3 filed therewith, each of the requests not only containing claims, but also amended description pages 2, 4 and 5.

Supplementary test reports were filed simultaneously (cf. Tables 1-3 of the statement of grounds of appeal).

An auxiliary request 4 consisting of a set of claims and amended description pages 2, 4 and 5, as well as further arguments and means of proof were filed with letter of 17 October 2011.

VII. By letter dated 4 October 2010 the respondent (opponent) requested the dismissal of the appeal and filed comments on the statement of grounds of appeal.

A supplementary test report as well as further arguments and means of proof were filed with letters of 14 October 2011 (see in particular data reported on the first half of page 4) and 8 November 2011.

VIII. Oral proceedings were held on 15 November 2011. After a comprehensive exchange of arguments regarding the admissibility of the requests then on file under Rule 80 EPC, in particular regarding description page 4, the appellant filed a new main request and a set of four auxiliary requests. The main request consisted of 13 claims, of which claim 1 was identical to claim 1 of the auxiliary request upon which the opposition division had based its decision. Claims 2-12 corresponded to claims 2-12 as granted, claim 13 to claim 14 as granted. Also, amended description pages 2 and 5 were submitted.

IX. The appellant's arguments regarding the main request may be summarised as follows:

Admissibility

(a) The main request aimed at overcoming objections raised by the respondent and the board. Therefore, it was admissible albeit late filed.

Amendments

(b) The amendments were in response to objections raised on the basis of grounds of opposition so that Rule 80 EPC was complied with.

(c) The amendments of claim 1 were supported by the passages of the original disclosure corresponding to paragraphs [0023] and [0030] of the patent in suit. They limited the extent of protection conferred by the amended claims. Hence, the requirements of Art. 123(2) and 123(3) EPC were met.

(d) The term "curable" was usual and its meaning clear to the skilled person (Art. 84 EPC).

Sufficiency of disclosure

(e) Considering the wording of the claims and the information provided in the patent in suit, the viscosity range of claim 1 could only refer to the solvent-free oligomers. Paragraph [0037] of the patent in suit was not in contradiction with that finding. This conclusion was confirmed by the

viscosity values reported in D13 and in Tables 1-3 of the statement of grounds of appeal because oligomer solutions or dispersions exhibited a much lower viscosity.

(f) The oligomers of claim 1 were Newtonian fluids i.e. their viscosity was independent of shear rate as demonstrated by the data given in D13 and shown in Tables 2-3 of the statement of grounds of appeal. There was no evidence on file that the oligomers defined in claim 1 were non-Newtonian i.e. that their viscosity varied as a function of the shear rate.

(g) The respondent had not brought evidence showing that the viscosity of the oligomers was dependent on the spindle used to determine it. The skilled person knew which spindle should be used to measure viscosities in the range claimed. According to page 41 of D18, spindle Z3 DIN would e.g. be appropriate for an accurate measurement at the upper claim limit. This conclusion was not in contradiction with the teachings of either D1 or D4. The test report filed by the respondent in the paragraph bridging pages 3 and 4 of the letter of 14 October 2011 (hereafter D19) was not a true repetition of example B of the patent in suit and the measurements were made at the extreme range of viscosity disclosed in D18: the reduction in viscosity obtained in D19 was a direct consequence of that high shear rate, which had led to heating of the sample and so to a decrease in viscosity.

(h) Even under the assumption that the objection of the respondent regarding an alleged ambiguity was to be followed, which was contested, there was no evidence on file that said ambiguity would deprive the skilled person of the promise of the invention as laid down in decision T 608/07 (not published in OJ EPO).

(i) Hence, the requirements of Art. 83 EPC were met.

X. The respondent's objections regarding the main request filed during the oral proceedings were essentially as follows:

Admissibility

(a) The main request was late filed. It raised new objections and problems that could not easily be dealt with at this stage of the proceedings. Besides, although the deficiencies these amendments aimed at overcoming had already been identified in the written proceedings, in particular in the annex to the summons to oral proceeding, the appellant had not used the opportunity to react in due time. The main request was therefore not admissible.

Amendments

(b) The deletion of claim 13 did not affect the scope of claim 1 and could not serve to remove an objection according to Art. 100(a) EPC. Therefore that amendment was not admissible under Rule 80 EPC.

(c) The application as filed contained no information establishing a relationship between "... curable at a temperature range of between 0 and 80°C." and the fact that the polyisocyanate was not blocked. Should the appellant argue that the deletion of claim 13 was a consequence of the addition to claim 1 of the requirement that the coating composition should be curable, the requirements of Art. 123(2) EPC would not be met. The limitation of the curing range "from 0 to 150°C" to "from 0 to 80°C" and the deletion of claim 13 further amounted to a new combination of features that was not present in the application as filed.

(d) According to common general knowledge, the word "curable" encompassed both chemical and physical curability. Should the appellant argue that the deletion of claim 13 was a consequence of the amendment of claim 1 regarding the curability, the requirements of Art. 84 EPC would not be met since it would mean that "curable" in the sense of the patent in suit would be restricted to chemical curing only.

Sufficiency of disclosure

(e) The patent in suit contained contradictory information that did not allow the skilled person to know whether the viscosity measurements recited in claim 1 should be performed either on the solvent-free oligomers or on a dispersion of said oligomers in a dispersing medium. The footnote of Table 1 in combination with paragraph [0037] of

the patent in suit implied that the viscosity measurements were made on a dispersion of oligomers in *n*-butyl-acetate. In addition, the patent in suit did not contain any information as regards how the viscosity measurements of solvent-free oligomers should be carried out.

(f) The polyester oligomers defined in claim 1 encompassed those having non-Newtonian properties. For such compounds, viscosity measurements only made sense when such information as shear rate and geometry of the spindle used were known, as confirmed by the data provided in the test report D19. In this regard, documents D4-D4a demonstrated that with the apparatus Physica Rheolab MC1 quoted in the patent in suit, various tools and spindles could be used to perform viscosity measurements in the claimed range of "less than 30 mPa.s". Considering that the patent in suit failed to provide any data regarding shear rate and spindle geometry, the skilled person was not in a position to select appropriately the polyester oligomers required to prepare the composition according to claim 1. The test report provided in the statement of grounds of appeal did not help to solve this issue.

(g) The polyester oligomers of claim 1 were defined in terms of viscosity using a range of absolute values. Document D1, however, taught that the viscometers used in the patent in suit did not allow to obtain absolute but only relative viscosity values.

(h) The statement found under point 3.4 of decision T 805/93 (not published in OJ EPO) confirmed that viscosity could not be measured without knowing the type of spindle to be used.

(i) The scope of the claims encompassed both blocked and unblocked polyisocyanates B). It was not possible to obtain "curable" compositions according to claim 1 using only blocked polyisocyanates.

(j) For these reasons, the requirements of Art. 83 EPC were not met.

XI. The appellant (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained on the basis of the main request, or alternatively of any of auxiliary requests 1-4 filed during the oral proceedings.

The respondent (opponent) requested that the appeal be dismissed.

XII. The Board announced its decision at the end of the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. The main request differs from the patent as granted in that:

(a) in claim 1 the feature ", wherein the coating composition is curable at a temperature range of between 0 and 80°C" was added at the end;

(b) claim 13, which had been directed to a coating composition wherein the polyisocyanate is blocked, was deleted;

(c) in the patent specification paragraph [0011] was adapted to claim 1; and

(d) in the patent specification paragraph [0030], line 6 the passage "... are between 0 and 150°C, preferably ..." was deleted.

3. Admissibility

It cannot be disputed that the main request filed during the oral proceedings, after a long discussion, was late filed. The Board, thus, concurs with the respondent that the amendments could have been made sooner. Nevertheless, the Board, exercising its discretion under Art. 13(1)(3) of the Rules of Procedure of the Boards of Appeal, considers that the present main request does not raise new issues since it only differs from the main request previously valid in the appeal proceedings in that the amendment made on page 4 of the description was cancelled. This modification aimed at overcoming an objection raised

under Rule 80 EPC that had not been fully understood by the appellant before the discussion held at the oral proceedings. The amendment had, however, no major consequence on the course of the debate, in particular not on the claimed subject-matter, so that the board and the respondent were in a position to deal with the case without the need of adjourning the oral proceedings. Therefore, the main request is admitted to the proceedings.

4. Rule 80 EPC

4.1 Amendments (a), (c) and (d) were not objected to under Rule 80 EPC and the Board accepts that they are an answer to motives of opposition raised by the respondent.

4.2 During the oral proceedings both parties agreed that the compositions according to claim 1, which are in particular characterised in that they are "curable at a temperature range of between 0 and 80°C." could not be made using blocked polyisocyanates as compound B. The respondent raised an objection under Art. 83 EPC in that respect, in particular regarding claim 13 as granted. The deletion of claim 13 as granted from the present main request is justified as an answer to that objection and is, thus, admissible under Rule 80 EPC.

4.3 Therefore, the requirements of Rule 80 EPC are met.

5. Art. 123(2) EPC

5.1 Amendment (a) is based on page 9, line 19 of the application as filed and corresponds to the preferred

curing temperature originally disclosed. That passage is of broad generality and applies to all embodiments of the coating composition disclosed in the application as originally filed. Therefore, contrary to the argumentation of the respondent, that amendment, even in combination with amendment (b), does not amount to a two-fold selection (curability temperature range, unblocked polyisocyanate) that had not been originally disclosed.

5.2 No other objection was raised and the Board sees no reason to depart from this view. Therefore, the requirements of Art. 123(2) EPC are met.

6. Art. 84 EPC

The word "curable" is commonly used in the field of polymer chemistry and its meaning is known to the skilled person. In the absence of any restriction in the patent in suit for that term it should be read in its broadest sense and, thus, encompasses any kind of process leading to the formation of a film upon heating at 0-80°C of the composition defined in claim 1. In that respect, the examples of the patent in suit show that the claimed coating compositions are cured, and hence must be such as having been curable, because a coating is obtained on which various tests such as "Free To Handle (FTH)", hardness, solvent resistance, "Enamel Hold Out (EHO)" and water resistance can be carried out. Therefore, the skilled person would understand either from the mere wording of the claims *per se* or in the light of the examples of the patent in suit the meaning of a "curable" coating composition according to claim 1.

The requirements of Art. 84 EPC are met.

7. Sufficiency of disclosure

7.1 One of the characteristics of the coating composition of claim 1 is the parameter "viscosity" the meaning of which was, according to the respondent, so unclear as to deprive the skilled person from the promise of the invention.

7.1.1 According to claim 1, the oligomer of part A) should be a low-viscosity oligomer, wherein "low-viscosity" means "a viscosity less than 30 Pa.s at 23°C". The wording of the claim therefore does not suggest that anything else than the oligomer itself should be measured. In particular, there is no mention of a dispersion to be measured.

7.1.2 This is confirmed by paragraph [0047] of the patent specification, in which it is clearly stated that the viscosities of "the obtained solvent-free polyester oligomers A to G" are given in Table 1. The footnote to Table 1, reading: "* *as 90% (m/m) solution in n.butyl acetate*" contains an asterisk normally used to refer to a particular item, which item is also marked by an asterisk. In the present case however, Table 1 does not contain any further asterisk so that it is not clear to which item the footnote refers and the question arises whether it could be an error. As it appears from the priority document, the footnote referred to a viscosity value in column "H" in Table 1 which had been deleted in the European application as filed, the footnote being erroneously left. Anyway, as accepted by the

respondent during the oral proceedings before the Board, the reference "as 90%(m/m) solution in n.butyl acetate" in the footnote to Table 1 can, for lack of reference, be of no significance for the information contained in the table and hence for the skilled person wishing to put the invention into practice so that it should be disregarded. Hence, there is no discrepancy between the information provided by paragraph [0047] and Table 1 of the patent in suit and it is clear that the viscosity measurements in the examples are carried out on solvent-free oligomers. As a consequence, the skilled person can conclude from the examples how to measure the viscosity of oligomers used according to claim 1 for curing with polyisocyanates, and hence is capable of repeating the examples and prepare the claimed compositions from such oligomers.

7.1.3 The clear indication regarding the factual measurement of solvent-free oligomers in paragraph [0047]/Table 1 is not abated by the statement in paragraph [0037] "The viscosity of the polyester oligomer ***dispersions*** is given in Pa.s, measured at 23°C with a rotation viscometer type Rheometer MC1 from Physica" (emphasis by the Board) since that statement does not give any details of those "dispersions" (e.g. solvent, concentration). The skilled person would therefore, when repeating the examples and preparing compositions as claimed, not find a reason to deviate from the clear instructions of paragraph [0047].

7.1.4 Under these circumstances, neither the reasoning given in the contested decision nor the argumentation of the respondent according to which the opposed patent entailed contradictory information so that the skilled

person was not in a position to measure the viscosity recited in claim 1, and as consequence was not able to select appropriately compounds A) in order to carry out the invention, could be followed.

7.2 With regard to the method of measurement of the viscosity, the question arose whether the information regarding shear rate and the spindle used were necessary in order to fulfil the requirements of Art. 83 EPC. That question amounted to the question whether or not the polyester oligomers were Newtonian fluids i.e. having a viscosity independent of shear rate.

7.2.1 Document D13 shows that the viscosity of oligomers prepared according to example B of the patent in suit does not significantly vary when using shear rates in the range of 0.2 to 1000 s^{-1}. The additional experiments reported in Tables 2 and 3 of the statement of grounds of appeal further show that the viscosity of other solvent-free oligomers as defined in claim 1 is independent of shear rate in the range 0.1 to 173 s^{-1}, the molecular weight Mw of the oligomers being in the range of 820 to 2990. Those data, thus, overcome the argument in the contested decision that polyester oligomers according to claim 1 may exhibit different viscosities when varying the shear rate, in particular depending on their molecular weight. Hence, from the evidence on file provided by the appellant/patent proprietor, it has to be concluded that the polyester oligomers defined in claim 1 behave as Newtonian fluids with the result that no indication of the shear rates is required in order to identify which compounds A)

should be selected to prepare the coating compositions according to claim 1.
The respondent/opponent contested this finding without however relying on any evidence, thus failing to give a basis to the objection of lack of disclosure. The argument can therefore not be followed.

7.2.2 It remained undisputed by the appellant that, in order to make an exact measurement of the viscosity, it is necessary to select the appropriate spindle according to the viscosity range to be measured (see page 6 of the statement of grounds of appeal under the heading "Spindle Varieties"). However, there can be no doubt that the skilled person is able to select the appropriate spindle considering the indications given in paragraph [0037] of the patent in suit regarding the type of viscometer to be used (MC1 from Physica) together with the viscosity range defined in claim 1, as well as the information provided in the handbook instructions of said viscometer (see in particular D18, page 41). There is no evidence on file that could lead the Board to doubt that the skilled person would not be in a position to carry out the invention on the basis of that information.

7.2.3 The respondent partly based its objection relying on document D4a (pages 79-80), which is an older version of D18. However, even if it could be agreed that D4a establishes that several kinds of spindle could be suitably used, it in no way demonstrates that the skilled person would not be in a position to identify and choose a suitable spindle for carrying out the viscosity measurement and appropriately select component A) according to claim 1.

7.2.4 Considering that D4a and D18 both show that it is possible to measure absolute viscosity values using the apparatus mentioned in the patent in suit, the argument of the respondent that D1 taught that only relative measurements could be made cannot be followed.

7.2.5 The reference by the respondent to point 3.4 of decision T 805/93 which states that "*Brookfield viscosity measurements with different spindle RPMs give quite different results*" does not lead to the conclusion that the case law of the boards of appeal demands that each patent description specifies the geometry of the spindle in order to fulfil the clarity requirement laid down by Art. 83 EPC. In the cited decision, the lack of disclosure derived essentially from the absence of precision relating to the temperature at which the component had to be measured. The assessment relating to the spindle was added as a supplementary ground which did not give rise to a detailed analysis. Anyway, as already said above, this statement is not disputed.

7.2.6 The above objections raised as insufficient disclosure in fact arise from an alleged ambiguity in relation to the determination method of "viscosity". Although an ambiguity may, under certain circumstances, lead to a lack of sufficiency according to Art. 83 EPC, it may also be related to an issue of lack of clarity according to Art. 84 EPC, which is in itself not a ground of opposition (see decision T 608/07: point 2.5 of the reasons). In order for an insufficiency to arise out of an ambiguity, it is normally necessary to show that the ambiguity deprives the person skilled in the art of the promise of the invention. However, in the

present case, the appellant has not only failed to demonstrate that the absence in the patent in suit of information regarding shear rate and/or spindle indeed leads to an ambiguity in the scope of the claims (Art. 84 EPC) but it has also not been shown why the alleged ambiguity would prevent the skilled person to put the claimed invention into practice (Art. 83 EPC).

7.3 The requirements of Art. 83 EPC are, thus, fulfilled.

8. Since the opposition division did not decide on novelty and inventive step and none of the parties gave arguments in this regard during the appeal proceedings, the Board considers it appropriate to remit the case to the first instance for further prosecution on the basis of the main request (Art. 111(1) EPC). There is therefore no need for the Board to consider the auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution on the basis of the main request (claims 1 to 13) filed during the oral proceedings of 15 November 2011.

The Registrar: The Chairman:

M. Canueto B. ter Laan