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**Datasheet for the decision  
of 26 September 2013**

**Case Number:** T 1378/10 - 3.3.03

**Application Number:** 02773245.2

**Publication Number:** 1444278

**IPC:** C08F220/28, C09D133/14

**Language of the proceedings:** EN

**Title of invention:**  
COATING COMPOSITIONS

**Patent Proprietor:**  
BASF Coatings GmbH

**Opponent:**  
Hexion Specialty Chemicals Research Belgium S.A.

**Headword:**

**Relevant legal provisions:**  
EPC Art. 54, 56  
RPBA Art. 12(4)

**Keyword:**  
Novelty - (yes)  
Inventive step - (yes)  
Late-filed evidence - admitted (no)

**Decisions cited:**  
T 1002/92

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
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Case Number: T 1378/10 - 3.3.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.03**  
**of 26 September 2013**

**Appellant:** Hexion Specialty Chemicals Research Belgium S.A.  
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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted on 17 May 2010 rejecting the opposition filed against European patent No. 1444278 pursuant to Article 101(2) EPC.**

**Composition of the Board:**

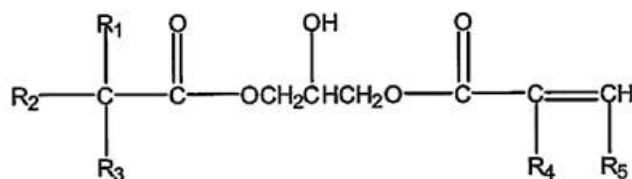
**Chairman:** B. ter Laan  
**Members:** O. Dury  
C. Vallet

### Summary of Facts and Submissions

- I. The appeal by the opponent lies against the decision of the opposition division posted on 17 May 2010 to reject the opposition filed against European patent No. EP 1 444 278, based on application No. 02 773 245.2, published as the international application WO 03/037943.
- II. A notice of opposition against the patent was filed on 30 January 2008, in which the revocation of the patent in its entirety was requested on the grounds of Art. 100 (a) EPC (lack of novelty as well as lack of an inventive step).
- III. The granted patent was based on 9 claims, of which claims 1 and 9 read as follows:

"1. An aqueous coating composition comprising an emulsion polymer comprising monomer units derived from an addition polymerizable ester of a glycidyl ester of a tertiary acid having 9 or more carbon atoms or a mixture of such acids, wherein such monomer units are present at up to 20% by weight of the emulsion polymer."

"9. A method of preparing an aqueous coating composition, including polymerizing a mixture of addition polymerizable monomers, wherein said mixture includes at least a monomer having a formula:



in which R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> are alkyl groups, at least one of which is methyl, having a total of at least 8 carbon atoms and R<sub>4</sub> and R<sub>5</sub> are either both H or one of R<sub>4</sub> and R<sub>5</sub> is a methyl group and the other is H and a monomer having active hydrogen functionality; to produce an emulsion polymer; and combining the emulsion polymer with one or more further materials including at least a crosslinker reactive with active hydrogen functionality."

Claims 2-8 were dependent on claim 1.

IV. The decision under appeal was based, *inter alia*, on the following documents:

D1: FR 2 182 896  
D2: US-A-3 787 519  
D3: EP-A-0 635 523  
D4: FR 2 020 719

In its decision, the opposition division held that the granted claims were novel over each of D1 to D4. The combination of features defined in granted claim 1 could only be obtained by combining several passages of D1 relating to e.g. a specific hydroxyl ester and weight ratios. The example of D1 reported an emulsion copolymer containing 35 wt.% of ACE units and was used to prepare a painting composition that was an organic solution. None of D1 to D4 disclosed aqueous coating compositions.

Regarding inventive step, D1 was the closest prior art. The problem to be solved was identified as providing a coating composition having lower volatile organic content as well as better handling properties and better appearance. Considering that none of D1 to D4

was directed to solving the specific problem of the patent in suit, an inventive step was acknowledged.

V. On 23 June 2010, the opponent (appellant) lodged an appeal against the above decision. The prescribed fee was paid on the same day. With the statement setting out the grounds for the appeal, received on 14 September 2010, the appellant requested that the patent be revoked. A further document was also filed:

D5: Water-thinnable Cardura Coatings, Technical Bulletin, Shell Chemicals, August 1991

VI. By letter of 25 March 2011, the respondent (patent proprietor) filed comments on the statement of grounds of appeal and requested the maintenance of the patent as granted.

VII. In the communication issued on 19 March 2013 accompanying the summons to oral proceedings, the Board identified relevant issues to be addressed during the oral proceedings. It was pointed out that the appellant had not brought forward any arguments based on D2 to D4. The admission of D5 into the proceedings would also have to be discussed.

VIII. With a letter dated 17 July 2013 the appellant filed comments regarding D5 as well as D2 to D4 and announced that he would not attend the oral proceedings.

IX. The respondent provided further arguments by letter dated 19 July 2013. It was requested not to admit D5, nor any arguments regarding D2 to D4 to the proceedings.

X. The oral proceedings took place on 26 September in the absence of the appellant, as announced.

XI. The appellant's arguments may be summarised as follows:

Novelty

- a) The appellant disagreed with the decision of the opposition division that the subject-matter of claim 1 was not disclosed in D1 to D4.
- b) D1 disclosed emulsion polymerisation of monomers derived from hydroxylated esters of tertiary acid having 9 or more carbon atoms. Comonomers for the emulsion polymerisation included methyl methacrylate. D1 also disclosed the specific feature of 20 wt.% monomer as well as the ratio between (A) and (B) from 10:90 to 50:50. According to D1 the copolymers prepared were usable in thermosetting coating compositions. Finally, D1 disclosed that solvents may be present in the composition, whereby water was not excluded. Therefore, the subject-matter of granted claim 1 was not novel over D1.
- c) D2 and D3 described the composition of copolymers as claimed in the contested patent. D2 further disclosed a coating composition comprising that copolymer. Therefore the knowledge of the cited passages in D2 and D3 anticipated the subject matter of contested claim 1. D4, which was indirectly cited in D1, described aqueous dispersions of such a copolymer. A coating composition of D4 comprising such an aqueous dispersion had to be an aqueous coating composition.

Inventive step

- d) D5 could not have been filed earlier because it had to be retrieved from Shell Chemicals archives. D5 dealt with water-thinnable formulations based on "Cardura" which were used for making films having a good appearance and free from sagging or bubbling. In view of the amount of water present, the paint formulation of D5 was an aqueous coating composition.
- e) The problem to be solved was defined in the patent in suit as reducing sagging. However, that statement was not supported by any evidence. Anyway, it was obvious for the skilled person that "Cardura" derived monomers increased the hydrophobicity of polymers derived therefrom. D5 also stated that sagging could be avoided by using "Cardura" derived polymers.
- f) The subject-matter claimed was, thus, obvious from the combination of D5 and D1.

XII. The respondent essentially argued as follows:

Novelty

- a) D1 disclosed a preparation process for a copolymer derived from an emulsion polymer (A) and an additional unsaturated monomer (B) and the use of such copolymers in coating compositions comprising e.g. a solvent. The emulsion polymer defined in present claim 1 could only be arrived at after performing a series of selections within the ambit



of D1. Anyway, D1 did not disclose water as a solvent, in particular not in the example. D1 was directed to coatings based on organic solvents and failed to disclose aqueous coating compositions as claimed in the patent in suit.

- b) There was no evidence on file that the emulsion polymer prepared in the example of D1 contained less than 20 wt. % of the monomer derived from the emulsion polymer ("ACE" in D1). Considering that the reaction was made using about 35 wt.% ACE monomers and assuming complete conversion, the copolymer did not satisfy the requirement defined in granted claim 1. The aqueous composition comprising the emulsion polymer prepared in D1 was not an aqueous coating composition according to granted claim 1 because it would not be suitable *per se* for making a coating.
- c) The appellant had not provided any substantial argument in respect of any of D2 to D4. The scarce comments submitted in the letter dated 17 July 2013 should not be considered in view of their late filing. In any case, none of D2 to D4 disclosed an aqueous coating composition.
- d) Therefore, the subject-matter of granted claims 1-9 was novel.

Inventive step

- e) The claimed subject-matter differed from the closest prior art document D1 at least in that it was directed to aqueous coating compositions.

- f) The problem to be solved was to provide coating compositions that were environmentally friendly and had good coating properties, as indicated in paragraph [0002] of the patent in suit. Examples 1-3 of the patent in suit showed that that problem was solved.
  
- g) D1 dealt with coatings based on organic solvents and could not possibly lead to the subject-matter of present claim 1, which was directed to aqueous coating compositions. D1 even taught away from the solution provided by the patent in suit since it had not been recognised that the emulsion polymers prepared therein could be used in aqueous coatings.
  
- h) The appellant had provided no valid reason justifying the filing of D5 at such a late stage of the proceedings. D5 neither disclosed emulsion polymers according to the present claims or to D1, nor did it disclose the same type of coatings as D1. Therefore, D5 was not *prima facie* highly relevant. Considering that D5 was a technical brochure, it did not form part of the common general knowledge. Therefore, D5 should not be admitted to the proceedings.
  
- i) D5, should it be admitted, dealt with water-thinnable coatings, which was a completely different system than the coatings based on an organic solvent according to D1. Hence, the combination of D1 and D5 would not be contemplated by the skilled person.

The polymers of D5 were not emulsion polymers and were all soluble in water and, thus, different

from the emulsion polymers defined in the present claims. Also, D5 provided insufficient information to determine the exact nature of the polymers it described. Therefore, even the combination of D5 and D1 would not lead to the subject-matter of the granted claims.

j) The subject-matter claimed was therefore not obvious.

XIII. The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested the dismissal of the appeal.

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

### **Reasons for the Decision**

1. The appeal is admissible.
2. The appellant, who was duly summoned to oral proceedings, did not appear and the oral proceedings were continued in its absence in accordance with Rule 115(2) EPC, the appellant being treated as relying only on its written case (Art. 15(3) RPBA).
3. Documents D2 to D4

The statement made by the appellant that he disagreed

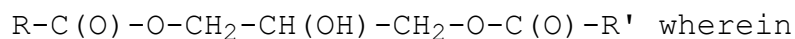
with the decision of the opposition division regarding novelty over D2 to D4 (section XI a)) was not substantiated in the statement of grounds of appeal. The additional comments submitted after oral proceedings had been arranged (section XI c)) are not more than a short description of the contents of the documents and do not allow the Board to identify the line of argumentation of the appellant, in particular why D2 to D4 were considered to anticipate the subject-matter defined in the granted claims and/or if the appellant intended to rely on those documents for the assessment of inventive step. Regarding novelty, the appellant has also not explained why he considered that the decision of the opposition division acknowledging novelty over D2 to D4 would be wrong.

Under these circumstances, the appellant has not clearly identified the facts intended to be relied upon. Considering that no case was made by the appellant regarding either novelty or inventive step in respect of any of D2 to D4 and the Board sees no reason why the decision of the first instance would be wrong on this point, these documents will not be addressed any further in the present decision.

4. Novelty

4.1 D1 discloses a process of emulsion copolymerisation in the aqueous phase of

(A) an hydroxylester of formula



R is an  $\alpha,\beta$ -unsaturated group;

R' is a group containing no ethylenical unsaturation;

and

(B) at least one other ethylenically unsaturated monomer (Claim 1).

The group R'-C(O) may be derived from a tertiary acid with the formula R<sub>1</sub>R<sub>2</sub>R<sub>3</sub>C-C(O)OH (claim 5). According to claim 6, depending *inter alia* on claim 5, the group R'-C(O) has at least 8 carbon atoms.

The comonomer ratio (A):(B) used in the process of D1 may be between 20:80 and 40:60 (claim 10).

- 4.2 For the emulsion copolymer defined in claim 1 of D1 to correspond to the "addition polymerisable ester of a glycidyl ester of a tertiary acid" as specified in present claim 1, the rest R' has to be a tertiary acid having eight or more carbon atoms (or a mixture thereof) and the amount of monomer (A) in the emulsion copolymer has to be selected to be at most 20 wt.%.

Such a combination of features is, however, not directly and unambiguously disclosed in D1 and can only be arrived at after performing a series of selections within the ambit of D1, regarding in particular the nature of monomer (A) and appropriate amounts of monomers (A) and (B). In that respect, monomer (A) has to be selected appropriately among all the alternatives of D1, which encompass hydroxylesters that do not correspond to an "addition polymerisable ester of a glycidyl ester of a tertiary acid" as specified in present claim 1 e.g. those derived from pivalic acid (D1: page 3, lines 8-9), which contains five carbon atoms, or from a group R'-C(O) having 8 carbon atoms (D1: claim 6). Furthermore, the quantities of monomers (A) and (B) disclosed in D1 (claim 10 and page 3, lines

29-31) say nothing about the final amount of (A) in the polymer thus prepared. Neither the claims nor the description of D1 discloses the feature of granted claim 1 relating to a maximum amount of 20 wt.% in the emulsion polymer of monomer unit derived from an addition polymerisable ester as defined therein.

In the sole example of D1 (starting on page 4, line 32), a monomer (A), also called ACE, is prepared from "Cardura E" and acrylic acid. From the information provided on page 4, lines 35 to page 5, line 6 of D1, this ACE monomer is an addition polymerisable ester of a tertiary acid having 9 or more carbon atoms or a mixture of such acids in the sense of present claim 1. ACE is then copolymerised in an aqueous emulsion with vinylchloride (VC) as component (B) (D1: page 5, lines 7-20) using a weight ratio ACE:VC of 140:260 i.e. 35 wt.% ACE. There is however no evidence on file regarding the final content of ACE monomer in the polymer prepared. There is in particular no evidence on file that the emulsion polymer thus prepared contains an amount of ACE monomer of at most 20 wt.% as specified in granted claim 1.

4.3 According to D1 the emulsion polymer prepared therein may be used in coating compositions when mixed with "solvents" (page 4, line 30). However, since D1 nowhere discloses that such solvent would be water, it does not directly and unambiguously disclose *aqueous* coating compositions.

In the example of D1, a coating composition is prepared from the precipitated and dried copolymer (page 5, lines 20-23). The solvent used is methylisobutylketone - MIBK (page 5, line 32). Since MIBK is an organic solvent, that coating composition cannot be seen as an

aqueous coating composition i.e. a composition based on water as the main solvent.

4.4 Claim 12 of D1, which is dependent on all previous claims, hence including claim 6, describes that the monomers (A) and (B) are added as a mixture in the form of an aqueous emulsion. However, Claim 12 refers to the copolymerisation reaction, not to the preparation of a coating composition. There is no evidence on file that the aqueous composition containing the emulsion polymer prepared in a process according to D1, in particular in the example, could be suitably used as *such* as a coating. In that respect, D1 only discloses that aqueous coating compositions may be prepared using water and the emulsion polymer together with other components (D1: page 4, lines 24-31).

4.5 For these reasons, D1 neither directly and unambiguously discloses an emulsion polymer nor an aqueous coating composition according to operative claims 1-8.

4.6 As a consequence of the above conclusion, D1 also does not anticipate the subject-matter of operative claim 9, which is directed to a method of preparing an aqueous coating composition.

4.7 Therefore, the subject-matter of claims 1-9 as granted is novel over D1.

5. Inventive step

5.1 The patent in suit relates to aqueous coating compositions comprising an emulsion polymer comprising monomer units derived from an addition polymerisable glycidyl ester of a tertiary acid having 9 or more

carbon atoms (or a mixture of such acids) and methods of preparing such coating compositions (paragraph [0001] of the patent in suit). The problem to be solved addressed by the patent in suit is to provide aqueous coating compositions which are environmentally friendly and have satisfying coating properties (paragraphs [0002] and [0004] to [0008]).

Examples 1-3 of the patent in suit show that that problem is effectively solved by aqueous coating compositions containing an emulsion polymer comprising 2, 4 and 8 pbw, i.e. 5, 10 and 20 wt.%, respectively, of the monomer units as defined in granted claim 1.

- 5.2 Apart from D5 (which is dealt with in section 6 below), the sole document mentioned on appeal for the assessment of inventive step is D1.
- 5.3 Although it was not clearly specified in the statement of grounds of appeal, the appellant did not contest the opinion of the Board given in the communication that D1 was considered to be the closest prior art (section 6.1.1).
- 5.4 D1 neither deals with the problem of providing environmentally friendly coating compositions, nor does it give a hint to the solution of the problem given in the patent in suit, according to claims 1 and 9. In that respect, the example of D1 describes that an emulsion polymer similar to those defined in present claim 1 is dried before it is incorporated in a coating composition based on an organic solvent. Therefore, D1 did not even consider the possibility of using emulsion polymers as defined in the granted claims in aqueous coating compositions.



5.5 Therefore, D1 is so remote from both the problem solved in the patent in suit and from its solution that the subject-matter claimed in the patent in suit cannot be held obvious in the light of D1.

5.6 For these reasons, the subject-matter of claims 1-9 is inventive over D1.

6. Admissibility of D5

6.1 D5 was for the first time filed by the appellant together with the statement of grounds of appeal. Its admissibility to the proceedings is subject to the Board's discretion (Art. 12(4) RPBA). In proceedings before the EPO such late filed documents should only be admitted into the proceedings if such material is prima facie highly relevant in the sense that it can reasonably be expected to change the final result and is thus highly likely to prejudice maintenance of the European patent (see e.g. point 2 of the headnote of T 1002/92, OJ 1995, 605).

6.2 D5 deals with "water-thinnable" Cardura coatings and discloses the preparation of two coatings based on either Cardura LR-28 and Cardura LR-52 (WS) (page 1, first paragraph). According to the second paragraph on page 1 of D5, those compounds are derived from Cardura E10 i.e. the same glycidyl ester of tertiary acids as those mentioned in paragraph [0011] of the patent in suit. However, the nature (e.g. chemical composition; preparation process) of Cardura LR-28 is not given in D5: in the first paragraph on page 2, reference is made to Technical Bulletin CA 2.1 without any further indication. Hence, it is not clear whether Cardura LR-28 satisfies the requirements of operative claim 1 regarding

- being an "emulsion polymer";
- the presence of an "addition polymerisable ester of a glycidyl ester of a tertiary acid";
- a maximum amount of 20 wt.% of said monomer.

The same is valid for Cardura LR-52 (WS) (see D5: page 5, in particular Table 2).

6.3 Under these circumstances, there is no evidence on file that D5 deals with "emulsion polymers" and/or discloses polymers at least similar to those defined in the granted claims.

6.4 The appellant concluded that inventive step was denied based on a combination of D5 and D1. However, D1 and D5 deal with two different types of coatings, namely solvent based coatings (D1) and water-thinnable coatings (D5). The appellant did not explain why such different teaching could be combined. In addition, considering that the nature of the polymers specified in D5 is unclear, it cannot be concluded that D1 and D5 deal with the same type of polymers. Consequently, it is highly questionable whether the teachings of D1 and D5 may be combined. Finally, even if they were to be combined, one would not arrive at the subject-matter being defined in claim 1, at least because D1 does not disclose aqueous coating compositions and D5 does not unambiguously disclose emulsion polymers as defined in the granted claims.

6.5 For these reasons D5 cannot be considered as being *prima facie* highly relevant.

6.6 The argument of the appellant that D5 could not have been filed earlier because it had been difficult to retrieve (section XI d)) is not convincing, in

particular because no reference to said document had been made at any stage earlier in the proceedings. Such an argument is, in the present case, not sufficient to justify the admission of D5 at such a late stage of the proceedings already for that reason.

6.7 Under these circumstances, the Board decided not to admit D5 to the proceedings (Art. 12(4) RPBA).

## Order

### **For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



E. Goergmaier

B. ter Laan

Decision electronically authenticated