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**Datasheet for the decision  
of 03 April 2013**

**Case Number:** T 0552/08 - 3.3.03  
**Application Number:** 98118001.1  
**Publication Number:** 0905157  
**IPC:** C08G 18/10  
**Language of the proceedings:** EN

**Title of invention:**

Polyurethane thickeners useful for clear and high gloss aqueous-based systems including paints and coatings including textile coatings, a process for providing rheological properties to clear aqueous-based systems using such thickeners and clear aqueous-based systems containing such thickeners

**Patent Proprietor:**

Elementis Specialties, Inc

**Opponents:**

OMG BORCHERS GMBH  
Cognis Deutschland GmbH & Co. KG  
Coatex SAS  
Rohm and Haas Company

**Headword:**

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**Relevant legal provisions:**

EPC Art. 83

**Keyword:**

"Sufficiency of disclosure (no)"

**Decisions cited:**

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**Catchword:**

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Case Number: T 0552/08 - 3.3.03

**D E C I S I O N**  
**of the Technical Board of Appeal 3.3.03**  
**of 03 April 2013**

**Appellant:** Elementis Specialties, Inc.  
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**Representative:** Harmsen, Dirk , et al  
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**Respondent I:** OMG BORCHERS GMBH  
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**Representative:** Eisenführ, Speiser & Partner, et al  
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**Respondent II:** Coatex SAS  
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**Representative:** Tetaz, Franck Claude Edouard  
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**Respondent III:** Rohm and Haas Company  
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**Representative:** Buckley, Guy Julian  
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**Decision under appeal:**           **Decision of the Opposition Division of the  
European Patent Office posted 17 January 2008  
to revoke the patent No. 0905157.**

**Composition of the Board:**

**Chairman:**           B. ter Laan  
**Members:**           D. Marquis  
                  C.-P. Brandt

## Summary of Facts and Submissions

I. The appeal by the patent proprietor lies from the decision of the opposition division dated 17 January 2008 to revoke European patent N° 0 905 157 based on application number 98 118 001.1 having a filing date of 23 September 1998.

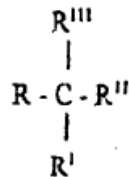
II. The patent was granted with a set of nineteen claims of which claims 1 and 8 read as follows:

"1. A polyurethane thickener especially suitable for clear aqueous systems comprised of the reaction product of

a) one or more polyisocyanates;

b) one or more polyether polyols; and

c) one or more branched capping agents selected from the group consisting of branched alcohols having the structure:



where

R = HO-CH<sub>2</sub>-(CH<sub>2</sub>)<sub>k</sub> with k=0 to 4.

R<sup>I</sup> = (CH<sub>2</sub>)<sub>m</sub>CH<sub>3</sub> where m=4 to 14

R<sup>II</sup> = (CH<sub>2</sub>)<sub>n</sub>CH<sub>3</sub> where n=2 to 10 and

R<sup>III</sup> = H, CH<sub>3</sub> or C<sub>2</sub>H<sub>5</sub> with H being preferred."

"8. A process for producing a polyurethane thickener especially suitable for aqueous systems according to any of claims 1 to 7 by effecting the reaction between components a), b), and c)."

III. Notices of opposition against the patent were filed on 13 April 2005 (Opponent 01), 20 April 2005 (Opponent 02) and 21 April 2005 (Opponents 03 and 04). The opponents requested the revocation of the patent in its entirety based on grounds according to Article 100(a) EPC (novelty and inventive step; all opponents), Article 100(b) EPC (opponents 03 and 04) and Article 100 (c) EPC (opponent 03).

IV. By letter of 02 November 2005, opponent 01 withdrew his opposition.

V. The decision of the opposition division was based, inter alia, on the following documents E10 (US4348307), E11 (US5023309) and E19 (First declaration of Mr B. Bobsein with Appendixes 1-4).

VI. The appealed decision was based on a main request and two auxiliary requests filed at the oral proceedings. The claims according to the main request were identical to claims 1 to 13 as granted.

Auxiliary request 1 differed from the main request only in the definition of the polyether polyols b) (addition indicated in bold by the Board):

"1. ...

a)...

b) one or more **water dispersible** polyether polyols; and

c)..."

Auxiliary request 2, too, differed from the main request only in the definition of the polyether polyols b) (addition indicated in bold by the Board):

"1. ...

a) ...

- b) one or more **water dispersible** polyether polyols **having an average molecular weight from 2000 to 20000;**
- and
- c)..."

VII. The opposition division held that the ground of opposition under Article 100(c) EPC had not been substantiated. The main request filed at the oral proceedings complied with the requirements of Articles 123(2) and 83 EPC but lacked novelty over document E10 in view of E19. The first auxiliary request met the requirements of Articles 123(2), 123(3), 84 and 83 EPC but lacked novelty over E10 in view of E19. The second auxiliary request complied with Articles 123(2), 123(3), 84 and 54 EPC but lacked an inventive step over E11.

VIII. On 14 March 2008, the patent proprietor lodged an appeal against the decision and paid the prescribed appeal fee on the same day. The statement setting out the grounds of appeal was filed on 27 May 2008. The appellant requested that the patent be maintained on the basis of the main request or one of the two auxiliary requests filed with the statement of grounds of the appeal.

IX. The following documents were cited in the grounds of appeal:

E32: Affidavit of Dr. Wilbur Mardis including Master Formulation Data Sheet, Experimental Protocol, and Test Data Sheet

E33: Affidavit of Professor Michael Van De Mark including Evaluation of Thickeners, and Test Data Sheet

- X. On 17 March 2008, opponent 03 also filed an appeal against the decision of the opposition division to revoke the patent. The prescribed fee was paid on the same day. The statement setting out the grounds of appeal was filed on 16 May 2008. Opponent 03 requested the revocation of the patent.
- XI. On 15 December 2008, respondent III (opponent 04) filed a reply to the statement of grounds of the appeal by the patent proprietor, providing arguments in respect of Article 100(c) EPC, Article 54 EPC, Article 56 EPC and Article 100(b) EPC. Further arguments regarding lack of sufficiency/inventive step were filed by letter of 1 March 2010, together with two declarations (by H.J. Docktor and A. Kohut).
- XII. On 11 January 2013, the Board issued a summons to attend oral proceedings on 03 April 2013 together with a communication in preparation of the oral proceedings.
- XIII. By letter of 20 February 2013, respondent II (opponent 03) withdrew his appeal and requested that the appeal filed by the patent proprietor be dismissed. Arguments were provided in respect of Article 54 EPC, Article 56 EPC and Article 100(b) EPC.
- XIV. By letters of 01 March 2013, both respondent I (opponent 02) and the appellant (patent proprietor) informed the Board that they would not attend the oral proceedings.
- XV. Oral proceedings were held on 03 April 2013 in the presence of respondents II and III.

XVI. The arguments of the appellant filed in writing only concerned the allowability of the main and auxiliary requests having regard to Article 54 EPC and Article 56 EPC. At no stage of the proceedings did the appellant give any comments on the arguments of the respondents, in particular not concerning objections under Article 83 EPC raised in response to the appeal.

XVII. The respondents' arguments may be summarised as follows:

The patent was insufficiently disclosed. The skilled person did not find enough information in the patent to produce clear products. There was also no guidance on how to select polyisocyanates, polyether polyols and capping agents so as to provide a polyurethane thickener especially suitable for clear aqueous systems. This guidance was critical because not all reaction products of polyisocyanates, polyether polyols and capping agents as defined in claim 1 were thickeners suitable for clear aqueous systems. This was shown by compound 1 in table 2, which was a product obtained by the process disclosed in the patent but was not suitable as a thickener for Hydrocote Clear Wood Lacquer.

XVIII. The appellant (patent proprietor) had requested in writing that the decision under appeal be set aside and that the European patent N° 0 905 157 be maintained on the basis of the main request or one of the two auxiliary requests filed with the statement setting out the grounds of the appeal.

The respondents (opponents 02, 03 and 04) requested that the appeal be dismissed.



## Reasons for the Decision

1. The appeal is admissible.

### *Main request*

2. Sufficiency of disclosure

- 2.1 Claim 1 of the present main request, which is identical to claim 1 of the main request before the opposition division and to claim 1 as granted, relates to polyurethane thickeners "[...] *especially suitable for clear aqueous systems*". The patent in suit contains no definition of that expression. The wording of claim 1 suggests that not all thickeners obtained from the reaction of the components a), b) and c) are especially suitable for clear aqueous systems. According to paragraph [0015] of the patent in suit, the thickener should not adversely affect the clarity, transparency and gloss of the dried coating. Paragraph [0051] of the patent in suit sets out that the use of the polyurethane thickeners for clear aqueous systems requires the dispersion of the thickener into the liquid coating to provide necessary rheology and the formation of a clear non-hazy film upon drying. These requirements are also reflected in the examples of the patent in suit and in the test reports E32 and E33 provided by the appellant in which the suitability of the dispersion was assessed by the Zahn Cup Viscosity, the film's haze and clarity being reported under "Clarity". Thus, the feature "*especially suitable for clear aqueous systems*" in claim 1 is to be seen as a

restriction of the claimed thickeners and can therefore not be disregarded.

2.2 Table 1 of the patent in suit indicates that the clarity was "*observed visually, of the dried film on plastic and coated black paper.*". The films disclosed in Tables 1 to 5 of the patent in suit are qualified as "*clear*" or "*hazy*". However, the patent in suit does not provide any information by which criteria the film was judged to be clear or hazy.

2.3 In addition, the patent in suit does not disclose how a polyurethane thickener has to be prepared in order to suit a chosen clear aqueous system and thus be "*especially suitable for clear aqueous systems*". Table 2 of the patent in suit shows that the polyurethane thickener compound 1, which complies with the compositional requirements of claim 1, is suitable for some clear aqueous systems (acid catalyzed clear system ① and the S.C. Johnson Formula 231-CM ②) but is not suitable for others as it cannot be dispersed in those coatings (Hydrocote Clear Wood Lacquer ④ and the Rohm and Haas Formula WR-104-10LF ③). Although compound 1 is not indicated as being comparative and hence is assumedly a compound according to claim 1, from table 2 it can be concluded that it is not always suitable as a thickener for clear aqueous systems. The patent in suit does not contain any indication which polyurethane thickeners are suitable for which clear aqueous systems or how the polyurethane thickeners should be modified so as to be suitable for clear aqueous systems and thus fall within the scope of claim 1, and it so leaves the skilled person with an undue burden of trial and error.

2.4 Under these circumstances, the skilled person is not in a position to prepare the polyurethane thickeners of claim 1. The patent in suit does therefore not fulfil the requirements of Article 83 EPC.

*Auxiliary requests 1 and 2*

3. Claim 1 of both auxiliary requests 1 and 2 also concern polyurethane thickeners "especially suitable for clear aqueous systems". The reasoning regarding the main request is therefore applicable to auxiliary requests 1 and 2, which therefore do not comply with Article 83 EPC.

**Order**

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

The appeal is dismissed.

The Registrar

The Chairman

E. Görgmaier

B. ter Laan