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**D E C I S I O N**  
**of 2 August 2005**

**Case Number:** T 0085/03 - 3.3.03

**Application Number:** 97109582.3

**Publication Number:** 812863

**IPC:** C08F 20/12, C08F 2/30

**Language of the proceedings:** EN

**Title of invention:**

Acrylic emulsions prepared in the presence of fully hydrolyzed poly (vinyl alcohol)

**Patentee:**

Wacker Polymer Systems GmbH & Co. KG

**Opponent:**

Clariant GmbH

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 83

**Keyword:**

"Disclosure - sufficiency (no) "

**Decisions cited:**

T 0550/91

**Catchword:**

-



Case Number: T 0085/03 - 3.3.03

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.03  
of 2 August 2005

**Appellant:**  
(Opponent)

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**Representative:**

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**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 dated  
17 September 2002 and posted 6 November 2002  
concerning maintenance of European patent  
No. 812863 in amended form.

**Composition of the Board:**

**Chairman:** R. Young  
**Members:** W. Sieber  
R. Moufang

## Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 812 863, in respect of European patent application No. 97 109 582.3, filed on 12 June 1997 and claiming a US priority of 14 June 1996 (US 663496), was published on 15 September 1999 (Bulletin 1999/37). The granted patent contained 19 claims, whereby independent Claims 1, 11 and 19 read as follows:

"1. A process for the emulsion polymerization of a monomer mixture consisting essentially of water insoluble, ethylenically unsaturated monomers having acrylic unsaturation for producing polyacrylic polymer particles wherein a polymerizable monomer system consisting essentially of at least one acrylic monomer is polymerized in the presence of water and a stabilizer for producing polyacrylic polymer, the improvement for producing an acrylic emulsion having a solids content of greater than 45% by weight without microfluidization which comprises:

a) effecting the polymerization in a polymerization zone utilizing a stabilizer consisting essentially of poly(vinyl alcohol) selected from the group consisting of poly(vinyl alcohol) having a hydrolysis value of greater than 96.5% and a poly(vinyl alcohol) having a hydrolysis value of at least 86% where the molecular weight is within a range of from 5,000 to 13,000 and in the substantial absence of surfactants and solvents, said poly(vinyl alcohol) being present in an amount of from 2 to about 15% by weight of the monomers to be polymerized; and,

b) effecting the polymerization in the presence of a chain transfer agent.

11. An aqueous emulsion consisting essentially of polymerized ethylenically unsaturated monomers having acrylic unsaturation for producing polyacrylic polymer particles, the improvement which comprises: said emulsion stabilized with a stabilizer consisting essentially of poly(vinyl alcohol) selected from the group consisting of poly(vinyl alcohol) having a hydrolysis value of greater than 96.5% and a poly(vinyl alcohol) having a hydrolysis value of at least 86% where the molecular weight is within a range of from 5,000 to 13,000 and said emulsion is substantially free of surfactants and solvents, said emulsion having a solids content of at least 45% by weight of the emulsion and the poly(vinyl alcohol) being incorporated in an amount of from 2 to 12% by weight of the polyacrylic polymers.

19. A redispersible acrylic polymer formed from the emulsion of any of claims 11 to 18."

Claims 2 to 10 and 12 to 18 were dependent claims.

II. A notice of opposition was filed on 15 June 2000 by Clariant GmbH, requesting revocation of the patent in its entirety on the grounds of Article 100(a) EPC, ie lack of novelty and lack of inventive step, and on the grounds of Article 100(b) EPC, ie lack of sufficiency of disclosure. The opposition was - *inter alia* - supported by the following documents:

D1: EP-B-0 538 571;

D2: EP-A-0 718 314;

D4: Product information concerning "Airvol<sup>®</sup>" of Air Products and Chemicals, Inc;

D5: *H.-G. Elias*, "Makromoleküle", 1975, excerpt from table of contents (filed by the opponent at the oral proceedings before the opposition division); and

D6: chapter "B5 Molmasse und Polymerisationsgrad von Mowiol", from a product information relating to Mowiol<sup>®</sup> polyvinyl alcohols, Mai 1999, (filed by the opponent at the oral proceedings before the opposition division).

III. By an interlocutory decision which was announced orally on 17 September 2002 and issued in writing on 6 November 2002, the opposition division decided that the patent could be maintained in amended form according to the proprietor's sole request then on file.

(a) Amended Claim 1 of this request differed from Claim 1 as granted in that the polymerizable monomer system was further specified (amendments indicated in bold) as "a polymerizable monomer system consisting essentially of at least one **C<sub>1-8</sub> alkyl ester of acrylic or methacrylic acid, and optionally less than 10 wt% of at least one other ethylenically unsaturated monomer having acrylic unsaturation**".

Amended Claim 10 differed from Claim 11 as granted in that the further requirement "**consisting essentially of at least one C<sub>1-8</sub> alkyl ester of acrylic or methacrylic acid, and optionally less than 10 wt% of at least one other ethylenically unsaturated monomer having acrylic unsaturation**" was inserted after the wording "monomers having acrylic unsaturation".

Claims 2 to 9 and 11 to 18 of this request corresponded to granted Claims 2 to 5, 7 to 10 and 12 to 19 whereby, due to the incorporation of the subject-matter of granted Claim 6 into Claim 1, the numbering and the dependency was amended where necessary.

- (b) The opposition division held that the amendment of Claims 1 and 10 was clear and supported by the application as originally filed.

As regards the molecular weight range of the polyvinyl alcohol (5,000 to 13,000), it was held that the claims of the patent read in the light of the description appeared to point towards number average molecular weight ( $M_n$ ) ranges. Although the opponent had shown that  $M_n$  could be measured by different methods, it had not provided evidence for its argument that different commonly available measurements led to different results. Since, furthermore, the skilled person knew how to measure  $M_n$ , the opposition division concluded that a skilled person did not face an unreasonable burden in putting the invention to practice.

(c) The claimed subject-matter was also considered to be novel and inventive over the cited prior art.

IV. On 15 January 2003, the opponent filed a notice of appeal against the above decision with simultaneous payment of the prescribed fee.

V. On 10 March 2003, the professional representative Dr Ackermann filed the statement of grounds of appeal. In the same letter, the transfer of the opposition to Celanese Emulsions GmbH was requested. In view of this transfer, the question arose as to whether Clariant GmbH was entitled to file the notice of appeal since it had already transferred the relevant business before filing the notice of appeal, and as to whether Celanese Emulsions GmbH which appeared to have filed the statement of grounds of appeal was entitled to do so.

At the oral proceedings held on 7 December 2004, the board heard the parties on the issue of admissibility of the appeal. By interlocutory decision dated 7 December 2004 (not published in the OJ EPO), the board decided that the opponent's appeal was admissible.

VI. In the statement of grounds of appeal and the further letter dated 28 April 2004, the appellant (opponent) argued with regard to the substantive issues in essence as follows:

(a) Amended Claims 1 and 10 as maintained by the opposition division violated Articles 84, 123(2) and (3) EPC.

- (b) The patent in suit lacked sufficiency because no method of measurement was given for the molecular weight which was an essential parameter of one type of the poly(vinyl alcohols). However, D5 and D6 showed that different methods existed and the values obtained were dependent upon the method chosen. Experimental results, D8, were filed to demonstrate that not only the method of measurement but also the measuring conditions of a commonly used method, ie gel permeation chromatography (GPC), were relevant reliably to define the molecular weight.

D8: Molecular weight measurements on Mowiol<sup>®</sup> 4-88 poly(vinyl alcohol).

Furthermore, it was pointed out that not all the claimed poly(vinyl alcohols) solved the posed problem, ie stable acrylate emulsions with high solids content. The example with poly(vinyl alcohol) D did not provide a stable polymer emulsion, although poly(vinyl alcohol) D fell within the scope of Claim 1.

- (c) The claimed subject-matter was not novel and not based on an inventive step in view D1 and D2. D1a, the European patent application corresponding to D1, was submitted.

D1a: EP-A-0 538 571.

VII. The arguments of the respondent (proprietor) presented in its counterstatement dated 30 September 2003 may be summarized as follows:



- (a) The amendments to Claims 1 and 10 were clear and supported by the application as originally filed.
- (b) Although different methods for measuring the molecular weight might provide different values for  $M_n$ , it would have been possible, without undue burden, to carry out the invention as defined in Claim 1. In this context, reference was made to T 550/91 of 4 April 1995 (not published in the OJ EPO). By reworking the examples in the patent in suit, it would have been possible to find out which of the methods had been used. Still further, a wide variety of commercial poly(vinyl alcohols) was tested in Example 5 which also provided the number average molecular weight of these poly(vinyl alcohols). Document D9, directed to the characterization of poly(vinyl alcohol), was submitted:

D9: *D.J. Nagy*, "Characterization of poly(vinyl alcohol) using SEC multiangle laser light scattering", *American Laboratory*, Vol. 27, n°4, page 47J ff (1995).

As regards poly(vinyl alcohol) D, it was pointed out that paragraph [0041] identified these results as somewhat spurious and that the poly(vinyl alcohol) was on the borderline of acceptable stabilizers. Such a statement implied that although it did not work as well as other stabilizers, it was still better than those previously shown in the prior art. That being the

case, the invention could clearly be worked across its breadth.

(c) The claimed subject-matter was also novel and inventive over D1 and D2.

VIII. In a communication, issued on 21 April 2005 accompanying a summons to oral proceedings, the salient issues to be discussed at the oral proceedings were identified by the board as being firstly, Articles 84, 123(2) and (3) EPC (in this context, paragraphs [0016] and [0017] of the patent in suit and the corresponding passages in the application as originally filed appeared most relevant), secondly, whether or not the missing indication of the method of measurement for the molecular weight led to a lack of sufficiency of disclosure, and thirdly, whether or not the claimed subject-matter was novel and inventive over the cited prior art.

IX. With the letter dated 3 June 2005, the appellant (opponent) maintained its previous objections, refiled copies of D5 and D6 which showed the respective publication date and filed the following new documents:

D10: Data sheet FA 201 "2-Hydroxyethyl acrylate"  
(August 2000);

D11: Data sheet FM 001 "Methacrylic acid"  
(September 2001); and

D12: EP-A-0 873 978.

X. In its submissions dated 1 July 2005, the respondent (proprietor) elaborated on the issues to be discussed at the oral proceedings. In particular with respect to the method for determining the molecular weight, it argued that GPC, also referred to as size exclusion chromatography (SEC), was the established method to determine this parameter. Furthermore, the combination of SEC with multiangle laser light scattering (MALLS) as the detection methods provided absolute values so that the indication of the exact measuring conditions was not necessary any more. Because reliable methods for measuring the molecular weight of poly(vinyl alcohol) were known at the date of filing of the patent in suit, there was no need to refer to the method of measurement. This was supported by the fact that three major producers of poly(vinyl alcohol), namely Celanese, Acetex and Wacker, did not mention the method of measurement when referring to the molecular weight of the products in their publications as could be seen from D13 to D15:

D13: Erkol - Acetex Group (from the internet);

D14: Celvol<sup>®</sup> Polyvinyl Alcohol - Celanese (from the internet); and

D15: Polyviol<sup>®</sup> - Wacker product information (June 1984).

XI. On 2 August 2005, oral proceedings were held before the board.

(a) Following a discussion as to whether or not Claims 1 and 10 of the request then on file, ie the claims underlying the decision under appeal

(section III(a), above), met the requirements of Article 123(2) EPC, the respondent (proprietor) withdrew this request, filed a new Claim 1 and requested that the patent be maintained on the basis of this new Claim 1 together with Claims 2 to 9 underlying the decision under appeal.

Amended Claim 1 of this new request differed from Claim 1 as granted (section I, above) in that the term "consisting essentially of" occurring twice in Claim 1 as granted was replaced by the term "**consisting of**" and the at least one acrylic monomer was further specified as at least one **C<sub>1-8</sub> alkyl ester of acrylic or methacrylic acid**. Thus, the relevant passages of Claim 1 read as follows:

"A process for the emulsion polymerization of a monomer mixture consisting of water insoluble, ethylenically unsaturated monomers ..." and "... a polymerizable monomer system consisting of at least one C<sub>1-8</sub> alkyl ester of acrylic or methacrylic acid ...".

- (b) The appellant (opponent) raised no objection against the introduction of this new request into the proceedings, and the board admitted the new request for consideration.
- (c) The appellant (opponent) raised no objection with respect to Articles 84, 123(2) and (3) EPC against new Claim 1 but maintained its objection that the claimed subject-matter did not meet the requirements of Article 83 EPC. In this respect, it basically relied on its written submissions.

Furthermore, it emphasized that the information on the molecular weight of the commercially available poly(vinyl alcohols) mentioned in Example 5 of the patent in suit was both inconsistent in itself and inconsistent with the data in D9.

- (d) With respect to Article 83 EPC, also the respondent (proprietor) basically relied on its written submissions. In particular, it pointed out that the skilled person would use size exclusion chromatography (SEC) in combination with multiangle laser light scattering (MALLS) as the detection method for determining the molecular weight of the poly(vinyl alcohol) which allowed the determination of absolute molecular weight and made the indication of measuring conditions superfluous. As regards the example with poly(vinyl alcohol D), it was considered to be merely an occasional lack of success.

XII. The appellant (opponent) requested that the decision under appeal be set aside and the patent be revoked in its entirety.

The respondent (proprietor) requested that the decision under appeal be set aside and that the patent be maintained on the basis of Claim 1 as submitted during the oral proceedings on 2 August 2005 and Claims 2 to 9 filed on 16 July 2002 with letter of 16 July 2002.

## Reasons for the Decision

### 1. *Admissibility of appeal*

In the interlocutory decision T 85/03 dated 7 December 2004 (not published in the OJ EPO), it was decided that the opponent's appeal complied with Articles 106 to 108 EPC and Rule 64 EPC and was therefore admissible.

### 2. *Amendments*

2.1 Claims 1 to 9 of the present request correspond to Claims 1 to 5 and 7 to 10 as granted (section I, above), except that in Claim 1 the term "consisting essentially of" occurring twice in Claim 1 as granted is replaced by the term "**consisting of**", and the at least one acrylic monomer is further specified as at least one **C<sub>1-8</sub> alkyl ester of acrylic or methacrylic acid**.

2.1.1 Basis for the latter amendment can be found on page 6, lines 1 to 5 of the application as originally filed (corresponding to page 3, lines 46 to 49 of the patent in suit). This passage generally refers to C<sub>1-8</sub> alkyl esters of acrylic or methacrylic acid as acrylic monomers which can be used in the polymerization process described in the patent in suit and places no limitation upon the use of these specific acrylic monomers with regard to certain process conditions. Thus, this amendment meets the requirement of Article 123(2) EPC.

2.1.2 The amendment from "consisting essentially of" to "consisting of" in Claim 1 implies that the monomer system is now an all acrylic water insoluble monomer

system of C<sub>1-8</sub> alkyl esters of acrylic or methacrylic acid. Although there is no explicit basis for the term "consisting of" in the application as originally filed, it is conspicuous to the board that all examples use a monomer mixture consisting only of methyl methacrylate and butyl acrylate. These two monomers are referred to on page 6, lines 5 to 8 of the application as originally filed (corresponding to page 3, lines 49 to 51 of the patent in suit) as the preferred monomers of the C<sub>1-8</sub> alkyl esters of acrylic or methacrylic acid esters, ie the group now required in Claim 1. Thus, the board agrees with the respondent (proprietor) that there is at least an implicit support in the application as originally filed for amending "consisting essentially of" into "consisting of" so that the requirements of Article 123(2) EPC are met.

2.2 Since furthermore, no objection under Article 84 or Article 123(3) EPC arises out of the amendment, the amendment to Claim 1 is allowable. Nor was any objection under Article 123 or Article 84 raised by the appellant (opponent).

2.3 Dependent Claims 2 to 9 correspond to Claims 2 to 5 and 7 to 10 as granted (section I, above), whereby, due to the deletion of granted Claim 6, the numbering and the dependency were amended where necessary. Consequently, also no objection under Article 123 or Article 84 EPC arises against Claims 2 to 9.

### 3. *Sufficiency of disclosure*

3.1 According to Claim 1, two types of poly(vinyl alcohol) can be used in the claimed process, namely a poly(vinyl

alcohol) having a hydrolysis value of greater than 96.5% and a poly(vinyl alcohol) having a hydrolysis value of at least 86% where the molecular weight is within a range from 5,000 to 13,000. Thus, the former type of poly(vinyl alcohol), also referred to as substantially fully hydrolyzed poly(vinyl alcohol), bears no restriction with respect to the molecular weight, whereas the latter type, also referred to as partially hydrolyzed poly(vinyl alcohol), requires a certain molecular weight.

The use of these two specific types of poly(vinyl alcohol) is, as pointed out in paragraph [0018] of the patent in suit, one of the keys for producing a high solids, ie greater than 45% by weight, all acrylic emulsion without the use of surfactants, solubilizers, and microfluidization techniques.

- 3.2 Although Claim 1 simply refers to a molecular weight range of from 5,000 to 13,000, it is apparent from the examples in the patent in suit and in particular from the tables on pages 5 and 14 that the molecular weight required in Claim 1 is a number average molecular weight ( $M_n$ ). This was not contested by the appellant (opponent).
- 3.3 The essence of the appellant's (opponent's) argument with regard to lack of disclosure is that the patent in suit contains neither explicit nor implicit information as to how the molecular weight of the partially hydrolyzed poly(vinyl alcohol) mentioned in Claim 1 had to be determined. Since, however, various methods were available to determine the molecular weight (eg D5) and different methods might provide different values, the



claimed process could not be reproduced without undue burden. Furthermore, not all the claimed poly(vinyl alcohols) solved the posed problem, namely to provide stable acrylate emulsions with high solids content.

Thus, with respect to sufficiency of disclosure, the relevant question is whether the skilled person would have been able, without undue burden, to carry out the invention as defined in Claim 1 over the whole range on the basis of the information given in the patent specification and of the common general knowledge (eg T 550/91 of 4 April 1995, point 4.1 of the reasons; not published in the OJ EPO).

3.3.1 The respondent (proprietor) did not contest that different methods for determining the molecular weight existed and might indeed provide different values for this parameter, but it took the position at the oral proceedings held on 2 August 2005 that the skilled person would use size exclusion chromatography (SEC) in combination with multiangle laser light scattering (MALLS) as the detection method for determining the molecular weight of the poly(vinyl alcohol). As evident from D9 (page 47J, 2<sup>nd</sup> column), the detection method MALLS has added a new dimension to the characterization of poly(vinyl alcohol) since it could determine, as a primary method, absolute molecular weight and size in solution, independent of elution volume and without the need for column calibration.

3.3.2 Although the use of MALLS as the detection method in SEC measurements may make the indication of the measuring conditions of SEC superfluous, eg type of eluant, elution volume or column calibration, it

appears doubtful whether the skilled person would employ the combination of SEC and MALLS in the present case to determine the molecular weight of the partially hydrolyzed poly(vinyl alcohol).

Firstly, D9 merely describes the application of aqueous SEC-MALLS for characterizing poly(vinyl alcohol) molecular weight, root mean square radius and conformation but it contains no hint that SEC-MALLS is commonly used for this purpose. On the contrary, it states in the paragraph bridging the 1<sup>st</sup> and 2<sup>nd</sup> column of page 47J that SEC is commonly used for molecular weight analysis of poly(vinyl alcohol). This passage refers only to SEC and not to SEC-MALLS.

Secondly, D9 is not a general textbook but an article from a rather specific journal and appears, therefore, not suitable to demonstrate the common general knowledge of the skilled person.

Thirdly, there appears to be a discrepancy between the data provided in D9 and the data presented in the patent in suit. Table 1 on page 47R of D9 indicates that a 4% solution of a partially hydrolyzed poly(vinyl alcohol) (page 47J, 1<sup>st</sup> column: 88%) with a viscosity of 3 cP (in water at 20°C) has a number average molecular weight of 13,900 which is outside the scope of Claim 1. On the other hand, the table on page 14 of the patent in suit shows for the commercially available poly(vinyl alcohol) Airvol<sup>®</sup>-502 with a viscosity range of 3.0 to 3.7 (measured under the same concentration and conditions as in D9 as evidenced by D4, a data sheet on Airvol<sup>®</sup> products) a number average molecular weight range of 7,000 to 13,000 which is within the scope of

Claim 1. Since, however, there is a correlation between the viscosity of a polymer solution and the molecular weight of the dissolved polymer, one would expect for the two viscosities measured under identical conditions the same molecular weight. This not being the case, it appears that the patent in suit did not use SEC-MALLS.

Finally, it appears from D6 that SEC-MALLS still was not the standard method for determining the molecular weight of poly(vinyl alcohols) in 1999, ie four years after the publication of D9. D6 states that the molecular weights of the polymers [ie the poly(vinyl alcohols)] generally depends upon the method of measurement. Therefore, a comparison of values is only possible if these were determined by the same method under identical conditions. Then, D6 identifies the method used in this document, namely SEC-MALLS (GPC gekoppelt mit statischer Lichtstreuung (Absolutmethode)).

In view of the above, it appears doubtful that the skilled person would have considered SEC-MALLS as the method for determining the molecular weight of the partially hydrolyzed poly(vinyl alcohol) in the present case.

- 3.3.3 However, the board agrees with the other view taken by the respondent (proprietor) at the oral proceedings before the opposition division and in its submissions dated 1 July 2005 (point X, above) that SEC is a reliable method commonly used to determine the molecular weight of partially hydrolyzed poly(vinyl alcohols). This view is also supported by D9 which identifies SEC as commonly used for the purpose of

molecular weight analysis of poly(vinyl alcohol) (point 3.3.2, above). But even if one assumes that the molecular weight in the patent in suit has to be measured with SEC, this information alone is not enough to obtain reliable values for the parameter in question. As demonstrated by the appellant (opponent) with the tests D8, SEC will produce significantly different values for the molecular weight of a particular poly(vinyl alcohol), depending on the measuring conditions (eg eluant and column calibration). It is conspicuous to the board that D6 also refers to the relevance of the measuring conditions (point 3.3.2, above) which shows that the appellant (opponent) did not overstate the difficulties of obtaining sufficiently reliable values for the molecular weight of poly(vinyl alcohol).

Despite the relevance of the measuring conditions in SEC, the patent in suit does not indicate these conditions. Nor can the commercial poly(vinyl alcohols) tested in Example 5 of the patent in suit assist the skilled person in calibrating the selected measuring method. Example 5 identifies - *inter alia* - Airvol<sup>®</sup>-203, a partially hydrolyzed (87-89%) poly(vinyl alcohol) with a number average molecular weight range of 7,000 to 15,000, as effective in acrylate stabilization. This molecular weight range is not in line with the molecular weight range required in Claim 1 because the upper limit of 15,000 is clearly outside the claimed range although it still delivers, according to Example 5, the promised effect. Thus, why should a skilled person apply the measuring conditions used for Airvol<sup>®</sup>-203 when the molecular weight range indicated for Airvol<sup>®</sup>-203 contradicts the teaching of the patent

in suit which places an upper limit of 13,000 to the molecular weight?

Furthermore, the data in Example 5 appear to be inconsistent in themselves. For example, Airvol<sup>®</sup>-203 with an upper limit in number average molecular weight of 15,000 is effective in acrylate stabilization whereas Airvol<sup>®</sup>-205 with a lower limit in number average molecular weight of 15,000 is not effective. Thus, in one case a poly(vinyl alcohol) with a molecular weight of 15,000 is an effective acrylate stabilizer but in the other not. This in itself raises the question whether these commercial products are suitable to calibrate the method of measuring the molecular weight.

- 3.3.4 Also the fact that three major producers of poly(vinyl alcohol) did (or do) not mention the method of measurement when referring to the molecular weight of their products is not in itself an indication that a generally accepted method of measuring existed at the priority date of the patent in suit. Firstly, only D15 of the three cited documents D13 to D15 was published before the priority date of the patent in suit. Secondly, even two years after the priority date of the patent in suit another producer of poly(vinyl alcohol) still identifies the method of measurement, and, in addition, points to the relevance of the method of measurement (D6; point 3.3.2, above). In fact, the statement in D6 raises doubts whether such a commonly used method existed at all at the priority date of the patent in suit. And finally, even if one agrees on SEC as the commonly used method at the priority date of the patent in suit, the problem concerning the exact measuring conditions still remains (point 3.3.3, above).

Thus, the argument of the respondent (proprietor) in this respect is not convincing.

3.3.5 The situation with regard to the determination of the molecular weight is further compounded by the fact that the teaching of the patent in suit apparently embraces possibilities which, although falling within the requirements of Claim 1, do not deliver the promised effect, ie acrylate stabilization at high solids. Thus, poly(vinyl alcohol) D has a degree of hydrolysis of 96.7% and a number average molecular weight of 7,000 to 13,000 (Table, page 5) and is therefore clearly within the scope of Claim 1. Nevertheless, it is marked comparative and fails to deliver a stable polymer emulsion. In fact, the polymer coagulated (paragraphs [0040] and [0041] in the patent in suit). The explanation given in paragraph [0041] that the poly(vinyl alcohol) employed is on the borderline of acceptable stabilizers is not convincing. Even if the skilled person would consider poly(vinyl alcohol) D being on the borderline of a substantially fully hydrolyzed poly(vinyl alcohol), it still meets the definition of the partially hydrolyzed poly(vinyl alcohol) of Claim 1, ie it has a degree of hydrolysis of at least 86% and a molecular weight of 7,000 to 13,000, and should therefore work.

Also the argument that occasional lack of success is generally acceptable cannot be applied to the present case where the implementation of the claimed invention largely depends on experiments a skilled person would have to carry out in order to find information missing in the patent in suit. Because of this occasional lack of success the skilled person would never be in a

position to reliably verify the result of these tests because the failure of a particular partially hydrolyzed poly(vinyl alcohol) to deliver the promised effect cannot necessarily be linked to the molecular weight.

3.3.6 In summary, the patent specification not only lacks information with respect to the measuring method and/or measuring conditions for determining the molecular weight of the partially hydrolyzed poly(vinyl alcohol), it is also not possible for the skilled person to retrieve the missing information in a reliable manner by reworking the examples or by carrying out own tests.

3.4 Under these circumstances, the skilled person is, in the board's view, not able, without undue burden, to carry out the invention of Claim 1 over the whole range claimed, in particular with respect to the partially hydrolyzed poly(vinyl alcohol) requiring a certain molecular weight. Hence, the requirements of sufficiency (Article 83 EPC) are not met.

**Order**

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

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

E. Görgmaier

R. Young