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**Datasheet for the decision  
of 8 August 2006**

**Case Number:** T 0497/03 - 3.3.01

**Application Number:** 94927057.3

**Publication Number:** 0721974

**IPC:** C09D 127/16

**Language of the proceedings:** EN

**Title of invention:**

Aqueous dispersion of vinylidene fluoride polymer and process  
for producing the same

**Patentee:**

DAIKIN INDUSTRIES, LIMITED

**Opponent:**

Dyneon GmbH & Co. KG

**Headword:**

Vinylidene fluoride polymer dispersion/DAIKIN

**Relevant legal provisions:**

EPC Art. 54, 83, 100(a)(b), 111(1), 114(1)  
EPC R. 71(2), 71a

**Keyword:**

"Main request: sufficiency of disclosure (yes)"  
"Novelty (yes) - non unambiguous disclosure"  
"Remittal (yes) - prior use and inventive step not decided by  
the first instance"

**Decisions cited:**

G 0009/91, G 0001/92, T 0182/88, T 0270/90, T 0534/98,  
T 0355/99, T 0566/01

**Catchword:**

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Case Number: T 0497/03 - 3.3.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.01  
of 8 August 2006

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**Decision under appeal:**              **Interlocutory decision of the Opposition  
Division of the European Patent Office posted 3  
March 2003 concerning maintenance of European  
patent No. 0721974 in amended form.**

**Composition of the Board:**

**Chairman:**                      A. Nuss  
**Members:**                      P. Ranguis  
   J. Van Moer

## Summary of Facts and Submissions

I. The Appellant (Proprietor of the patent) lodged an appeal against the interlocutory decision of the opposition Division to maintain the European patent No. 0 721 974 (European patent application No. 94 927 057.3) in the form as amended according to the third auxiliary request pursuant to Article 102(3) EPC.

II. Claim 1 of main request (Claim 1 as granted) read as follows:

"1. An aqueous dispersion of a vinylidene fluoride polymer, which comprises a vinylidene fluoride polymer having a particle size of not more than 200 nm, wherein a solid content is from 30 to 50 % by weight and a content of a fluorine-containing surfactant is not more than 1% by weight on the basis of water."

III. The Opponent (now Respondent) sought revocation of the patent in suit under Articles 100(b) EPC and 100(a) EPC (lack of novelty and inventive step). Novelty of Claim 1 was contested in view of the disclosure of document,

(1) DE-A-25 01 730

and on the basis of an alleged prior use.

Furthermore document

(7) US-A-4 369 266

was submitted in the course of the opposition proceedings as further evidence against novelty of the claimed subject-matter.

- IV. In the communication attached to the summons to oral proceedings, the Opposition Division had informed the parties *inter alia* that the alleged public prior use was not sufficiently substantiated and that document (7) was not *prima facie* relevant and, therefore, was not introduced into the procedure pursuant to Article 114(2) EPC.

In its decision, the Opposition Division, regarding the ground of opposition under Article 100(b) EPC, disagreed with the Opponent's view that the dispersions as claimed only could be prepared either by emulsion polymerizing in the presence of an additional non-ionic, non-fluorine-containing type surfactant or by solution-polymerizing a monomer mixture of VdF, TFE and perfluorobutenoic acid and, therefore, that Claim 1 covered subject-matter (no non-ionic, non-fluorine-containing type surfactant or no perfluorobutenoic acid as comonomer) that the person skilled in the art could not carry out without undue difficulty. By contrast, the Opposition Division held that the information given in the patent in suit in combination with common general knowledge enabled the person skilled in the art to prepare the aqueous dispersions as defined in Claim 1 within its whole ambit without undue effort since, in particular, the person skilled in the art, with his common general knowledge could upconcentrate the mixture when the solid content was below the solid content required in Claim 1.

The Opposition Division held however that the subject-matter of Claim 1 of the main request lacked novelty over document (1). That document disclosed a process for preparing vinylidene fluoride polymer by emulsion. The content of the fluorine-containing surfactant was 0.03 to 0.33% by weight on the basis of water. The solids content of the resulting dispersion was 10 to 40% by weight but might be upconcentrated by known techniques such as flash evaporation to a solid content of 40 to 60% by weight. The vinylidene fluoride polymer in the latex had a particle size of 0.1 to 1  $\mu\text{m}$  (100 to 1000 nm), preferably 0.2 to 0.5  $\mu\text{m}$  (200 to 500 nm). Since the particle size of 200 nm was explicitly mentioned and since the solid content overlapped the amount of solid content as defined in Claim 1, there was no reason for a skilled person not to work within the range of overlap. Furthermore, example 3 of document (1) disclosed a dispersion containing 0.07% by weight of fluorine-surfactant and 37% of solids content. The combination of this example with a particle size of 200 nm anticipated the subject-matter of Claim 1 of each request. Even though example 3 did not immediately provide a high enough solids content upon achieving a particle size of 200 nm, document (1) disclosed a solid content of 40-60% by weight after an upconcentration treatment.

The Opposition Division also confirmed that the late-filed document (7) was not admitted into the proceedings pursuant to Article 114(2) EPC as not more relevant than document (1).

- V. Oral proceedings before the Board took place on 8 August 2006.

- VI. With a letter received on 1 June 2006, the Appellant filed two fresh sets of claims as third and fourth auxiliary requests and maintained the main request and the first and second auxiliary requests rejected by the Opposition Division.
- VII. The Board was informed by a letter received on 26 June 2006 that the Respondent would not be represented at these oral proceedings. The oral proceedings were thus held in the absence of the duly summoned Respondent in accordance with Rule 71(2) EPC.
- VIII. The Appellant submitted the following arguments in the course of the appeal proceedings:

The information given in the patent in suit combined with common general knowledge enabled the person skilled in the art to prepare aqueous dispersions as defined in claim 1 within its whole ambit without undue effort. The burden of proof to demonstrate a lack of enablement was on the side of the Respondent who failed in that respect to provide any evidence.

Regarding novelty, a dispersion having a solids content of at least 30 wt.% combined with a particle size of 0.2  $\mu\text{m}$  or less was not unambiguously disclosed in document (1). Example 3 of document (1) was reproduced and solids content and average particle size of the dispersion sampled every 30 minutes through the polymerisation reaction were measured. This experiment showed that a dispersion containing particles having an average particle size of not more than 0.2  $\mu\text{m}$  and a solid content of not less than 30% by weight could not

be prepared. Example 6 did not at all disclose that after polymerization resulting in 13.5 wt.% of solids, a further up-concentration should take place.

Document (7) did not disclose unambiguously a dispersion which combines a high solid content and a low amount of surfactant together with a small particle size.

IX. The Respondent submitted the following arguments in writing in the course of the proceedings:

Regarding the ground of opposition under Article 100(b) EPC, the arguments already submitted before the first instance were maintained, namely that the methods disclosed in the patent in suit only enabled aqueous dispersions that also contained either a non-ionic surfactant or the polymer contained repeating units deriving from a monomer having ionic groups or a polyalkylene oxide group. The invention as claimed was, therefore, not enabled over the full ambit of Claim 1. The Opposition Division had held in the reason for the decision that the method of upconcentration was within common general knowledge of the person skilled in the art and, therefore, the person skilled in the art could without undue burden obtain dispersions throughout the full ambit of the claim. However, as a consequence, the same standards of enablement should be used when judging enablement of the prior art or enablement of the claimed invention.

Regarding novelty, document (1) mentioned explicitly a particle size of 200 nm in the preferred range and the explicit mentioning of a solids content of 40%. It was

nevertheless agreed, as submitted by the Appellant, that by increasing the solids content during emulsion polymerisation the particle size increased. If the person skilled in the art would want to prepare a dispersion having a particle size of 200 nm or less, he would not conduct the emulsion polymerization up to the maximum solids content of 40% but would rather stop the emulsion polymerization at a point where the desired particle size is reached since he knows that further polymerization would only increase the particle size. To obtain the desired solids, he would simply upconcentrate the dispersion to arrive at the desired solids content of for example 40%. Example 6, in that respect, yielded a dispersion the solids content of which was 13.5% by weight, what amounted to a particle size of the dispersion of about 100 nm. Since it is within the common general knowledge and the teaching of document (1) to upconcentrate to 40 to 60% solids, document (1) disclosed directly and unambiguously dispersions within the scope of Claim 1.

Document (7) related to a method of upconcentrating a dispersion of vinylidene polymer using ultrafiltration. The upconcentration process could be used on dispersions having particle size of 5 nm to 3000 nm, preferably 10 nm to 1000 nm. The resulting upconcentrated dispersion had an amount of solids of 35 to 75% by weight, preferably 40 to 60% by weight. Since the particle size did not change in an upconcentration process, it followed that starting from a dispersion having a particle size of 5 or 10 nm, the resulting product also had the same particle size. The preferred amount of fluorinating surfactant was between 0 and 0.19% based on solids and, therefore, within the range



defined in Claim 1. Document (7) explicitly disclosed dispersions having a particle size of 5 nm or 10 nm combined with an amount of fluorinated surfactant and solids content within the claimed area.

- X. The Appellant requested that the decision under appeal be set aside and the patent be maintained as granted or, in the alternative, on the basis of the first or second auxiliary requests submitted on 5 December 2002, or the third or fourth auxiliary requests submitted on 1 June 2006.

The Respondent requested in writing that the appeal be dismissed.

- XI. At the end of the oral proceedings the decision of the Board was announced.

## **Reasons for the Decision**

1. The appeal is admissible.

Main request

2. Sufficiency of disclosure

- 2.1 A European patent gives rise to objection under Article 100(b) EPC if it does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art. This ground of opposition refers directly to the requirement provided by Article 83 EPC. The essence of the Respondent's arguments regarding lack of disclosure

is that the skilled person does not have sufficient guidance from the patent in suit in order to arrive at the desired aqueous dispersion of a vinylidene fluoride polymer within the whole ambit of Claim 1 (see point IX above).

2.2 Since Claim 1 relates to a product defined by chemical and physical characteristics, the question to be answered is whether or not the patent specification as a whole makes this product available to the person skilled in the art. The Respondent submitted in support thereof neither evidence in the form of working experiments nor literature in the relevant technical field. The burden of proof was however upon him to substantiate his allegation (see T 270/90, OJ EPO 1993, 725, point 2.1). Already for this reason, the Respondent failed to substantiate its ground of opposition.

2.3 In lieu thereof, the Respondent argued that the presence of the non-ionic non-fluorine-containing surfactant involved in the process of preparation of these aqueous dispersions according to Claim 1 was not recited therein, whereas this presence derived necessarily of the said process.

2.4 However, this surfactant is not a feature of the claimed aqueous dispersions but merely a feature of the process for preparing them, said surfactant being used furthermore as a "trace amount" (see page 4, line 11 of the patent in suit and page 6, line 33 of the application as originally filed). A component which does not participate in the technical effect provided by the claimed product is not a technical feature of

- this product and does not need to be recited to render such a product sufficiently disclosed within its whole ambit under Article 83 EPC.
- 2.5 The Board observes that both parties and the Opposition Division agreed that the step of upconcentrating latex formed part of the common technical knowledge in the relevant field. Although the Board cannot find in the file of the opposition/appeal proceedings any literature relating to this alleged common general knowledge, the furnishing of proof of purportedly common general knowledge is, in that case, not required and such fact can be accepted by the Board (see T 534/98, point 8). However, in view of the above reason, such a finding is not relevant to the sufficiency issue.
- 2.6 For the above reason, the objection under Article 100(b) EPC is rejected.
3. Novelty over document (1)
- 3.1 The subject-matter of Claim 1 of the main request was found to be anticipated under Article 54(2) EPC in view of document (1).
- 3.1.1 This document discloses a method of preparing high molecular weight vinylidene fluoride polymers in aqueous emulsion. The aqueous emulsion containing the vinylidene fluoride polymer is then recovered from the reactor. Generally, this latex contains from about 10 to about 35 wt. percent polymer solids. The particle size of the polymer in the latex is in the form of small spheres in the size range of about 0.1 to about

one micron, preferably 0.2 to 0.5 micron (see page 9, lines 12 to 19). The examples 1 to 5 are working examples according to this disclosure. Example 6 was carried out according to the method described in the prior art.

3.1.2 First, it is clear and not contested by the Respondent that no example discloses aqueous emulsions with all the technical features as defined in Claim 1. In particular, the Appellant repeated twice the example 3 of this disclosure. A first test submitted in the course of the examining proceedings showed that the polymer content of the latex thus obtained was 36% by weight and the average particle size of the polymer in the latex was 287 nm. A second test submitted with the statement of grounds of appeal of the same example 3 showed that the particle size of the polymer grew with the polymer content (see Figure 1). Thus, after 30 minutes of reaction time, the particle size was 150 nm and the solids content less than 10%. After about 60 minutes the particle size was 200 nm and the solids content of about 16%. After 3 hours and ten minutes, the particle size was above 350 nm and the solids content of 30% or so. Clearly, the disclosure of this document does not disclose a dispersion containing particles having an average particle size of not more than 200 nm and a solid content of not less than 30% by weight since the particle size grows as a function of the solids content. It is, therefore, not correct to ignore the latter and artificially combine the preferred range of particle size with the amount of solids content such as disclosed (see point 3.1.1 above), as if those parameters were independent from each other, since - as shown by the experiments of the

Appellant - they are in fact interdependent. Such an artificial combination does not reflect the actual disclosure of document (1).

3.1.3 The Respondent submitted that if the person skilled in the art would want to prepare a dispersion having a particle size of 200 nm or less he would not conduct the emulsion polymerization up to the maximum solids content of 40% but would rather stop the emulsion polymerization at a point where the desired particle size is reached since he knew that further polymerization would only increase the particle size. To obtain the desired solids, he would simply upconcentrate the dispersion to arrive at the desired solids content of for example 40%.

3.1.4 There is indeed in document (1) a general statement that stabilized latex can be further concentrated by known techniques such as creaming or flash evaporation to obtain "lattices containing from about 40 to 60 wt. percent polymer solids" (see page 10, lines 6 to 11) and it is not contested that upconcentrating forms part of the common general knowledge (see point 2.5 above). However, the stabilized latex is not characterized with regard to the particle size. An upconcentration applied to a polymer dispersion of low solids content and having a particle size of 200 nm or less must be, therefore, regarded as speculative and not unambiguously disclosed in document (1).

3.1.5 In this context, the Board emphasises that the essential point in assessing novelty is that it is not sufficient for a finding of lack of novelty of claimed features that such features could have been derived

from a prior document. In order to be novelty destroying, there must be a clear and unmistakable teaching of the claimed features in a prior art document (see T 566/01, point 4.8 and T 355/99, point 2.2.4).

3.1.6 In view of the above, document (1) does not disclose clearly and unambiguously the claimed subject-matter of Claim 1 contrary to the finding of the Opposition Division.

4. Remittal to the first instance

4.1 The Board has come to the conclusion that the subject-matter of Claim 1 of the main request complied with the requirement of novelty in respect of document (1), overcoming, therefore, the sole reason for revoking the European patent as granted. Having so decided, the Board has not taken a decision on the complete case.

4.2 Indeed, the Opponent also sought revocation of the patent in suit on the ground that the subject-matter of Claim 1 as granted lacked novelty in respect of an alleged prior use or did not involve an inventive step (see point III above). The decision of the Opposition Division is silent regarding those issues.

4.3 Regarding the prior use issue, the Board observes that the communication of the Opposition Division dated 24 October 2001 indicated that the alleged prior use was not sufficiently substantiated. However, a communication under Rule 71a EPC cannot be considered as a reason which is included in the decision. The purpose of the appeal proceedings *inter partes* being mainly to

give the losing party the possibility of challenging the decision of the Opposition Division (see G 9/91, OJ EPO 1993, 408, point 18), already for this reason, the Board finds appropriate to exercise its discretion under Article 111(1) EPC to remit the case to the first instance in order not to deprive the parties of the possibility of being heard by two instances with regard to the other issues raised in the opposition proceedings.

- 4.4 When dealing with the prior use issue, the Opposition Division should be aware that the Jurisprudence established by the Enlarged Board of Appeal in its decision G 1/92 (OJ EPO 1993, 277) might not be irrelevant.

An essential purpose of any technical teaching is to enable the person skilled in the art to manufacture or use a given product by applying such teaching. Where such teaching results from a product put on the market, the person skilled in the art will have to rely on his general technical knowledge to gather all information enabling him to prepare the said product. Where it is possible for the skilled person to discover the composition or the internal structure of the product and to reproduce it without undue burden, then both the product and its composition or internal structure become state of the art (see point 1.4 of G 1/92).

- 4.5 Furthermore, the Opposition Division had not admitted document (7) into the proceedings pursuant to Article 114(2) EPC as late-filed and not more relevant than document (1).

- 4.5.1 When a decision hinges upon the exercise of discretion, the reason should be given (see T 182/88, point 8). Since the Opposition Division has given in its decision the reason for disregarding the late-filed document (7), the Board considers that the non admissibility of the late-filed document under Article 114(2) EPC was within the discretion of the first instance. It is not the function of a Board of Appeal to review all the facts of the case as if it were in the place of the Opposition Division and to decide whether or not it would have exercised such discretion in the same way as the first instance. Furthermore, since the Opposition Division revoked the patent in suit for lack of novelty in view of document (1), it would have been hardly possible to find document (7) more relevant. Relevancy of document (7), in particular, for the issue of inventive step was as a matter of fact not considered in those circumstances.
- 4.5.2 The Board observes nonetheless that although document (7) did not form part of the opposition proceedings, the Respondent strongly challenged at the appeal stage the novelty of Claim 1 of the patent in suit over document (7). The Board exercising its own discretionary power under Article 114(1) EPC admits the newly introduced document (7) as more relevant than document (1) in the sense that this document discloses concentrated dispersions of fluorinated polymers with a high solids content obtained after an upconcentration process from dispersions of lower solids content.
- 4.5.3 The Board wishes to point out that this finding is in no case to be regarded as an assessment under Article 54 or 56 EPC of this admitted state of the art.



It merely requires the Opposition Division to consider it in the assessment of novelty **and** inventive step

**Order**

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

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution.

The Registrar

The Chairman

S. Sánchez Chiquero

A. Nuss