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**Datasheet for the decision
of 28 October 2010**

Case Number: T 0079/08 - 3.3.03

Application Number: 02728552.7

Publication Number: 1377617

IPC: C08F 259/08

Language of the proceedings: EN

Title of invention:
High build dispersions

Patentee:
E.I. DU PONT DE NEMOURS AND COMPANY

Opponent:
SOLVAY SOLEXIS S.p.A.

Headword:

-

Relevant legal provisions:
EPC Art. 83

Relevant legal provisions (EPC 1973):

-

Keyword:

"Sufficiency of disclosure - (no)"
"Crucial condition cannot be reliably fulfilled"

Decisions cited:

T 0060/89, T 0694/92, T 0629/05

Catchword:

See sections 4 and 5, in particular 4.5-4.7, 5.6, 5.17 and 5.18



Case Number: T 0079/08 - 3.3.03

D E C I S I O N
of the Technical Board of Appeal 3.3.03
of 28 October 2010

Appellant: E.I. DU PONT DE NEMOURS AND COMPANY
(Patent Proprietor) 1007 Market Street
Wilmington
DE 19898 (US)

Representative: Morf, Jan Stefan
Abitz & Partner
Patentanwälte
Postfach 86 01 09
D-81628 München (DE)

Respondent: SOLVAY SOLEXIS S.p.A.
(Opponent) Via Turati, 12
I-20121 Milano (IT)

Representative: Benvenuti, Federica
Solvay S.A.
Département de la Propriété Intellectuelle
Rue de Ransbeek, 310
BE-1120 Bruxelles (BE)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office dated 24 October 2007
and posted 8 November 2007 revoking European
patent No. 1377617 pursuant to Article 102(1)
EPC.**

Composition of the Board:

Chairman: R. Young
Members: M. C. Gordon
C.-P. Brandt

Summary of Facts and Submissions

I. Mention of the grant of European Patent No. 1 377 617 with the title "High Build Dispersions" in the name of E.I. Du Pont de Nemours and Company in respect of European patent application No. 02728552.7, filed on 13 March 2002 as international application No. PCT/US2002/009056, published as WO 02/072653 A2 on 19 September 2002, and claiming priority dates of 13 March 2001 from US 60/275,441 and 4 January 2002 from US 60/345,298 was announced on 6 October 2004 (Bulletin 2004/41) on the basis of 48 claims.

Claims 1, 23 and 40 read as follows:

1. A dispersion comprising non-melt-processible fluoropolymer particles having an SSG of less than about 2.225 in aqueous medium, said fluoropolymer particles comprising a core of high molecular weight polytetrafluoroethylene and a shell of lower molecular weight polytetrafluoroethylene or modified polytetrafluoroethylene, wherein at least about 1.5 weight % of said fluoropolymer particles comprise substantially rod-shaped particles having a length to diameter ratio of greater than about 5.

23. A coating composition comprising a concentrated dispersion of non-melt-processible fluoropolymer particles having an SSG of less than about 2.225 in aqueous medium containing a surfactant, said dispersion containing about 30 to about 70 weight % fluoropolymer, said fluoropolymer particles comprising a core of high molecular weight polytetrafluoroethylene and a shell of lower molecular weight polytetrafluoroethylene or modified polytetrafluoroethylene, wherein at least about 1.5 weight % of said fluoropolymer particles consists of substantially rod-shaped particles having a length to diameter ratio of greater than about 5.

40. A batch process for producing non-melt-processible fluoropolymer dispersion comprising polymerizing tetrafluoroethylene in an aqueous medium in the presence a dispersing agent to produce fluoropolymer having an SSG of less than 2.225, said polymerizing being carried out in first stage during which a first amount of free radical initiator is added and second stage during which a second amount free radical initiator and a telogenic agent are added, said first amount of initiator producing polytetrafluoroethylene having an average melt creep viscosity greater than about 1.2×10^{10} Pa-s, and said second amount of initiator being at least about 10 times said first amount and being added before about 95% of the total tetrafluoroethylene has been polymerized, said second amount of initiator producing polytetrafluoroethylene or modified polytetrafluoroethylene, and wherein said polymerizing in said first stage is carried out so that at least about 1.5 weight % of said fluoropolymer particles comprise substantially rod-shaped particles having a length to diameter ratio of greater than about 5.

Claims 2-21 were directed to preferred embodiments of the dispersion of claim 1.

Claim 22 was directed to a non-melt processable fluoropolymer powder obtained by coagulating and drying the dispersion of claim 1.

Claims 24-34 were directed to preferred embodiments of the coating composition of claim 23.

claim 35 was directed to the composition of claim 23 in the form of a baked layer.

Claims 36-38 were directed to a substrate coated with the composition of claim 35 and preferred embodiments thereof.

Claim 39 was directed to a self-supporting film cast from the dispersion of claim 1.

Claims 41-48 were directed to preferred embodiments of the process of claim 40.

II. A notice of opposition to the patent was filed on 5 July 2005 by Solvay Solexis S.p.A.

The opponent invoked the grounds of opposition pursuant to Art. 100(a) EPC (lack of novelty, lack of inventive step) and Art. 100(b) EPC (insufficiency of disclosure).

Inter alia the following documents were submitted in support of the opposition:

D1: EP-A-1 174 448

D2: EP-A-1 229 091

D3: EP-A-1 127 896

D4: EP-A-481 509.

D1-D3 were comprised in the state of the Art pursuant to Art. 54(3) EPC.

Lack of novelty was alleged *inter alia* in respect of the compositions of:

- D1, comparative example 7;
- D2, example 4;
- D3, example 5.

During the course of the opposition proceedings the opponent filed, with letter dated 22 August 2007, evidence in the form of three images - "Photo 1",

"Photo 2", "Photo 3" - relating respectively to the invoked examples of D1, D2, and D3.

In a letter dated 19 October 2007 the patent proprietor reported the results of manual analyses of the three photos submitted by the opponent with the letter of 22 August 2007 which in the case of all three photos revealed a content of rod-shaped particles lower than that reported by the opponent and lower than that required by claim 1 of the patent in suit.

During the oral proceedings before the opposition division the opponent explained that it had carried out the analysis of the content of particles in the images by a computer counting method.

III. By a decision dated 24 October 2007 and posted on 8 November 2007 the opposition division revoked the patent.

The decision was based on the claims of the patent as granted as main request and two sets of claims, filed with a letter of 24 August 2007 as auxiliary requests (Annexes 2 and 3 of the decision).

(a) The decision held that the requirements of Art. 83 EPC were satisfied since the patent comprised "a vast amount of instructions" and 6 inventive examples.

The Opponent had failed to advance evidence demonstrating that this was not sufficient to allow the skilled person to operate the invention.

(b) With regard to the determination of the content of rod-shaped particles the decision held that according to the examples of the patent in suit the weight percentage (W) of fluoropolymer particles having a length to diameter ratio greater than about 5 was determined as follows:

- Taking an SEM (scanning electron microscope) image of a part of the particle dispersion comprising about 80-382 particles;
- Determining the total amount A_a of particles by hand counting;
- Determining the amount A_b of the particles having a length to diameter ratio of greater than about 5 ("substantially rod-shaped particles");
- Estimating the total volume V_a of all particles using their mean length L_a and mean diameter D_a ;
- Estimating the total volume V_b of the substantially rod-shaped particles using their mean length L_b and mean diameter D_b ;
- Determining W as $W=100 \times V_b / V_a$.

(c) With regard to novelty the opponent had argued that using a computer count revealed that the dispersions of D1, D2 and D3 had contents of at least 1.5 wt% of rod-shaped particles having a length to diameter ratio greater than about 5. However the opponent had not shown that using the hand count method described in the patent in suit resulted in values of the content of rod-shaped particles within the scope of the claims, i.e. at least 1.5 wt%.

On the contrary, using the hand count method revealed that the dispersions of the cited examples of D1-D3 did not have the required content of rod-shaped particles.

Thus the subject-matter claimed was novel.

Novelty was also acknowledged with respect to the disclosure of D4 since the opponent had provided

no evidence that the content of rod-shaped particles in that dispersion was at least 1.5 wt%.

- (d) With regard to inventive step the decision held that the opponent had shown that the hand count method outlined in the patent in suit (see section (a) above) was not very accurate since a different method - computer count - yielded a different value for the content of substantially rod-shaped particles.

Further the opponent had shown that it was necessary that the dispersion contain a great part of rod-shaped particles but that it was not necessary that a small weight percentage of these should have a length/diameter ratio (hereinafter "l/d ratio") greater than about 5. Accordingly the requirement that at least about 1.5 wt% of the fluoro polymer particles comprise substantially rod-shaped particles having a l/d ratio of greater than about 5 could not be used to render the claimed subject matter inventive.

The only difference between example 2 of D4 and the claimed subject matter was that the latter required a particular small weight percent content of rod-shaped particles. Since this feature did not cause any unexpected technical effect an inventive step had to be denied.

- (e) Accordingly the patent was revoked.

IV. A notice of appeal against the decision was filed on 10 January 2008 by the patent proprietor, the prescribed fee being paid on the same day.

V. The statement of grounds of appeal was received on 18 March 2008, accompanied by three sets of claims and an experimental report.

(a) The amended sets of claims submitted constituted:

- A main request and consisting of 46 claims;
- A first auxiliary request consisting of 46 claims;
- A second auxiliary request consisting of 37 claims.

(b) Claim 1 of the main request had been amended, compared to claim 1 of the patent as granted (see section I, above) by specifying an upper limit for the content of rod-shaped particles of about 20 wt%.

Thus the corresponding phrase of the claim read as follows:

"...wherein at least about 1.5 weight % to about 20 weight % of said fluoropolymer particles comprise substantially rod-shaped particles having a length to diameter ratio of greater than about 5".

As a consequence of this amendment granted claims 14 and 15 had been deleted, the subsequent claims renumbered and dependencies adjusted.

A corresponding amendment had been made to claims 21 and 38 corresponding to claims 23 and 40 as granted.

The auxiliary requests, which had been amended in the manner indicated for the main request were otherwise stated to correspond to the two auxiliary requests considered in the decision under appeal.

Thus auxiliary request 1 differed from the main request in that claim 38 (i.e. former claim 40) specified that radical initiator was persulfate.

Auxiliary request 2 differed from the main request in that claims 38-46 (corresponding to granted claims 40-48) were deleted.

(c) With respect to inventive step the appellant/patent proprietor argued essentially as follows:

- The problem addressed by the patent in suit was to improve the critical coating thickness ("CCT") of coatings prepared from non-melt processable fluoropolymer dispersions;
- The solution to that problem was to prepare the fluoropolymer particles in a process which resulted in a minimum percentage by weight comprising substantially rod-shaped particles having a l/d ratio of greater than about 5, designated "needle shaped" particles;
- The examples and comparative examples of the patent in suit showed that having the specified content of needle-shaped particles improved the CCT;
- The content of needle-shaped particles was the key factor in obtaining improved CCT of the coatings;
- Any apparent correlation with the ratio of average length to average diameter was purely coincidental.
- The significance of the content of needle-shaped particles was confirmed by analyses

attached to the statement of grounds of appeal, including the newly submitted examples. Any apparent correlation with the ratio of average length to average diameter for the whole dispersion was entirely coincidental.

- (d) Regarding the counting method, it was submitted that hand-counting was more reliable than computer counting.

VI. The opponent - now the respondent replied with a letter dated 25 September 2008. This letter gave the representative as "Sama Patents s.p.i" and was signed by Daniele Sama.

Two further documents were submitted:

D10: WO-A-00/71,950

D11: EP-A-1 059 342

- (a) Objections pursuant to Art. 83 EPC were maintained since the patent in suit failed to disclose how to obtain the rod-like particles.
- (b) Novelty objections were maintained with respect to D1-D4.

It was doubted that the results of hand counting reported by the patent proprietor in its submissions during the opposition procedure were correct. A hand count carried out by the respondent/opponent yielded results very similar to those obtained by computer counting but differing from those reported by the patent proprietor.

- (c) With regard to inventive step the respondent/opponent maintained its position with reference to the decision of the opposition division that the CCT was influenced only by the

averaged l/d ratio and that the content of rod-shaped particles having a l/d ratio of 5 or more had no effect on CCT.

The credibility of the additional examples filed by the appellant/patent proprietor was disputed.

VII. On 6 November 2009 the Board issued a first summons to attend oral proceedings, scheduled for 4 February 2010. In a communication dated 26 November 2009 the Board set out its preliminary provisional position with respect to inventive step, and stated that the issues of Art. 54 EPC and Art. 83 EPC would also be the subject of the oral proceedings.

VIII. In a letter dated 14 December 2009 from "SOLVAY - DIRECTION CENTRALE RECHERCHE & TECHNOLOGIE INTELLECTUAL ASSETS MANAGEMENT" copies of correspondence with the EPO dated 30 January 2009 relating to a change of representative and revocation of the power of attorney of Mr Daniele Sama was provided. Despite this, so the letter, correspondence relating to the case had still been sent to the latter.

A change of the date of the oral proceedings was requested by the new representative in the light of these circumstances.

IX. The change of representative was duly registered, and recorded in a communication dated 17 December 2009.

X. In a further summons dated 18 December 2009 the date of oral proceedings was changed to 12 March 2010.

XI. In a letter dated 27 January 2010 the appellant/patent proprietor announced the attendance of a technical

expert - Mr Aten - at the oral proceedings.

Further auxiliary requests 3-7 were submitted.

(a) The submissions of the respondent/opponent with respect to Art. 83 EPC were contested, *inter alia* as being disguised objections of lack of clarity.

(b) With regard to novelty and the question of the counting method (hand or computer) of the visualised dispersions the appellant/patent proprietor submitted:

- Hand counting was more reliable than computer counting;
- Paragraphs [0067] and [0077] of the patent in suit provided information as to the method of visualisation and hand counting;
- The patent proprietor's calculation based on Photo 1 (reported in the submission of 19 October 2007) was based on physical measurement of the (187) particles located on the left hand part of the image;
- All particles had been visually examined. There was only a single rod-shaped particle with l/d greater than 5;
- The weight percentage of the one rod found in the image was taken and divided by the weight of the particles in the half of the image that had been analysed and the weight of the particles in the other half of the image which was assumed to be very similar;
- The assumption that each half of the image contained the same number and average weight of particles was reasonable as shown by the hand count showing a total of 375 particles in the whole image, and 187 particles in the left hand half of the image ($187 \times 2 = 374$);

- It was emphasised that the patent referred to weight percent of rod-like particles;
- There were doubts whether the respondent/opponent was referring to weight percent, number percent or "whatever", and no document had been filed which allowed the calculations of the respondent/opponent to be followed;
- Similarly D2 and D3 failed to disclose dispersions with the required content of rods as would be apparent from inspection of the images.

(c) With regard to inventive step it was submitted:

- The patent proprietor had found that a fluoropolymer dispersion having, *inter alia* a specific amount of rod-shaped particles provided coatings with exceptional balance of high CCT and high shear stability;
- The patent in suit specifically requested that the amount of rod-shaped particles be between 1.5 and 20 wt%;
- The skilled person would not have been guided by the prior art to select such a content of rods;
- Unexpectedly the dispersion of the patent in suit characterised, *inter alia* by a content of rod-shaped particles in the range 1.5 to 20 wt% provided dispersions with excellent CCT and shear stability and long shelf life;
- Too few or too many rods was detrimental to the CCT;
- The content of rods correlated better with high CCT than average l/d ratio;

- This was in particular confirmed by the newly filed examples (with the statement of grounds of appeal);
- The content of rods was decisive for reliably obtaining a fluoropolymer dispersion with improved shear stability, good shelf life and providing coatings with high CCT;
- The prior art did not lead the skilled person to the claimed content of rods.

XII. In a letter dated 12 February 2010 the respondent/opponent announced the attendance of a technical expert - Mrs Poggio - at the oral proceedings.

(a) The objection pursuant to Art. 83 EPC that the patent failed to teach how to obtain dispersions having the required content of rod-shaped particles was maintained.

(b) Also with respect to Art. 83 EPC it was objected that the method for determining the fraction of rod-shaped particles in the dispersion was not sufficiently disclosed:

- It emerged from the submissions of both parties at the opposition and appeal stages, that the question of determining the fraction of rod-shaped particles was the key question for appreciating whether the cited documents provided a disclosure of the claimed subject matter;
- From the discussion at first instance it resulted that the appellant/patent proprietor considered that the skilled person did not know which method to use (i.e.

hand- or computer counting), nor did all methods give the same result;

- The respondent/opponent had shown that hand counting and computer counting yielded very similar results. In contrast it was the position of the appellant/patent proprietor that the two methods gave significantly different results;
 - Only paragraph [0067] of the patent in suit described the hand count method. This taught:
 - to hand count the particles;
 - to model the particles as cylinders;
 - to measure each cylinder, converting to nm using the scale given on the SEM image;
 - The hand count was highly subjective. The patent in suit provided no guidance how to identify cylinders, e.g. taking into account irregular shapes or how to measure the dimensions of irregularly shaped particles;
 - All these factors led to uncertainty and corroborated the objection of lack of sufficiency.
- (c) Objections of lack of novelty were thus maintained with respect to the disclosures of D1-D3 and D4.
- (d) Similarly with respect to inventive step objections to the newly filed examples were maintained, and it was requested that these not be admitted to the procedure.
- Objections of lack of inventive step with respect to the teachings of D11 were maintained.
- (e) Objections were raised with respect to the newly filed auxiliary requests, the details of which are not relevant for the present decision.

XIII. with a letter dated 9 March 2010 the appellant/patent proprietor filed a new auxiliary request- numbered 8 - which had been amended with a view to addressing objections of the respondent/opponent in respect of auxiliary request 3.

XIV. With a letter also of 9 March 2010 the respondent/opponent informed the Board that its technical expert - Mrs Poggio - would be unable to attend the oral proceedings, and in lieu of her attendance filed an affidavit (herein after "The Poggio affidavit").

According to this affidavit the analysis of Photo 1 had been carried out as follows:

- The total number of particles depicted in the image were hand counted (480);
- Each particle was modelled as a cylinder and the long and short axis of each particle determined, with a ruler expressing the results as μm , thus corresponding to the length and diameter of each particle;
- The l/d ratio for each particle was determined and the number of particles having a value for this ratio of greater than 5 determined (result: 5);
- The volume of each particle having l/d ratio greater than 5 was determined, applying the geometric rules for the volume of a cylinder. The overall volume $\Sigma(L_{\text{larg}}*D^2_{\text{larg}})$ was determined to be 0.168 cubic μm ;
- Similarly the volumes of each of the other particles was determined and the volume of particles having l/d value of less than 5 determined;

- These two volumes were added to give the overall volume of all particles (both having l/d exceeding 5 and those with l/d less than 5):
 $\Sigma(L \cdot D^2) = N L_{av} D_{av}^2 = 7.303$ cubic μm ;
- Since all particles had the same density the ratio between the volume of particles having l/d exceeding 5 and the total volume of particles gave the weight fraction of rod-shaped particles namely 2.3 wt%.

XV. A first oral proceedings was held before the Board on 12 March 2010.

(a) The Board announced after hearing the parties that:

- The Poggio affidavit (see section XIV, above) and
- D10 (WO-A-00/71,590, submitted with the rejoinder to the statement of grounds of appeal) were admitted to the proceedings.

(b) The discussion at the oral proceedings focussed on the manner in which the number of particles having an l/d ratio greater than 5 ("rods" or "needles") was to be determined.

This discussion fell into two major parts:

- the calculation required to arrive at the wt% of rods (particles with l/d ratio greater than 5) present in the dispersion;
- the analysis of the SEM images in order to obtain the data necessary for the calculation.

(c) *The calculation method- submissions of the appellant/patent proprietor*

The appellant/patent proprietor argued with reference to paragraph [0067] of the patent in

suit that the correct manner to carry out the calculation was:

- To measure the dimensions of each particle individually, modelling them as cylinders, so obtaining a series of individual cylindrical volume values (which values were proportional to the weight);
- To group this data according to whether the measured aspect ratio was greater than 5 or 5 or less;
- To calculate the fraction of the volume of all particles (i.e. the sum of the individual volumes calculated) made up by the sum of the volumes of those particles having an aspect ratio of greater than 5 (rods);
- The method set out in paragraph 4.5 of the decision under appeal (see section III.(b), above) which relied on calculating an average volume for the totality of particles present, was not correct;
- This matter had not been raised previously in the appeal proceedings as the significance thereof had not been appreciated;
- The skilled person would realise that employing the method as set out in the decision under appeal, i.e. calculating the total volume on the basis of the (collective) average values for length and diameter reported in the examples of the patent in suit would not yield the figures reported in the examples for the proportion of particles and that

- This would confirm to the skilled person that the method involving treating the particles individually rather than collectively had to be employed.

(d) *The calculation method - submissions of the respondent/opponent*

The respondent/opponent argued with reference to the Poggio affidavit (see section XIV, above) that the method as set out in the decision under appeal, i.e. using the collective average values of length and diameter to determine the total volume of all particles was correct.

(e) *The calculation method - observations of the Board*

The Board observed that according to the procedure described in the examples of the patent in suit, in particular the introductory comparative example A, it appeared that the average volume of the particles, derived from the determined average length and diameter values collectively was employed in the calculation of the proportion of rods, not however the properties of each particle individually. The Board observed that this was contrary to the position taken by the appellant/patent proprietor.

Similarly the Board observed that analysis of the Poggio affidavit suggested that, in contrast to the position taken by the respondent/opponent in its oral submissions, the volume of each particle individually had been taken into account and that the collective averaging method proposed by the respondent/opponent in the oral submissions had not been employed.

Consequently the method of averaging adopted by both parties was consistent but not in accordance with that set out in the examples of the patent in suit. Further the method derivable from the examples of the patent in suit appeared to be reflected in the remarks of the opposition division, section 4.5 of the reasons of the decision under appeal, which had not been commented on by either of the parties.

- (f) With regard to the actual measurement of the particles on the images, specifically Photos 1, 2 and 3 submitted with the letter of the opponent dated 22 August 2007, filed during the opposition proceedings, the appellant/patent proprietor indicated that due to the poor quality of the images analysis had been difficult. The quality of the originally submitted images was contrasted with the significantly higher quality of the image attached to the Poggio affidavit.

During the course of this discussion the respondent/opponent indicated that the original data existed in digital form.

A further source of contention between the parties was the manner of actually analysing the images to ascertain the number of particles. The Board observed in this connection that submissions made during the course of the procedure demonstrated that the parties were unable to agree even on the number of particles shown on Photo 1, let alone the percentage of particles having an aspect ratio

of greater than 5.

- (g) Under the circumstances where there was not one but there were two significant sources of uncertainty regarding the evaluation of the evidence, either of which on its own was sufficient materially to alter the outcome of the case, the Board found itself unable to come to an informed conclusion as to the probative value of the evidence discussed.
It was therefore decided to continue the procedure in writing.
- (h) The parties were therefore invited to make submissions as follows:
- (i) Within two months the respondent/opponent was:
- to submit the (original) high quality images of Photos 1, 2 and 3, preferably accompanied by the underlying digital data and
 - to report in detail how these images had been obtained;
- (j) Following receipt of the images the Board would then issue a further communication, setting a further period of two months for the parties:
- to provide analyses of the images, explaining in detail how these analyses had been carried out;
 - to make further submissions on the question of the correct calculation method for determining the proportion of rod shaped particles on the images in order to assist the Board in understanding which method was to be applied.
- (k) The parties were also invited to provide comparisons of the outcomes that would be obtained by application of each of the two alternative calculation methods discussed at the oral

proceedings.

- (1) The above was communicated to the parties in a communication dated 29 March 2010, sent together with the minutes of the oral proceedings.

XVI. With a letter dated 3 June 2010 the respondent/opponent provided the images and experimental reports detailing how the underlying dispersions and the images had been obtained, as set out in the communication of the Board (section XV, above).

With regard to the calculation method for the population of rod-shaped particles the respondent/opponent submitted:

- The appellant/patent proprietor had submitted that the only calculation method consistent with the data of the examples of the patent in suit was to treat the particles individually rather than to employ the average dimensions of the particles;
- Thus the respondent/opponent had carried out calculations based on the - averaged - values reported out in the patent in suit for examples 1 and 2, the results of which were gathered in a table:

Data available	Exemple 1	Reference in patent in suit	Exemple 2	Reference in patent in suit
% number of rod particles	10	Page 11, line 46	4,9	Page 12, line 9
% weight of rod particles	2.8%	Page 11, line 48	1.9%	Page 12, line 9
N_{tot} (number)	230	Page 11, line 44	328	Page 12, line 6
L_{av} (nm)	413	Page 11, line 49	325	Page 12, line 7
D_{av} (nm)	183	Page 11, lines 49-50	195	Page 12, line 7
N_{tot}^{rod} (number)	10 % of 230 =23	-	4.9% of 328 = 16	-
L_{av}^{rod} (nm)	900	Page 11, lines 48-49	770	Page 12, line 8
D_{av}^{rod} (nm)	68	Page 11, lines 48-49	78	Page 12, line 8

Starting from these data the content of rod-shaped particles using the reported averaged values could be computed as follows:

$$\% \text{ wt rod shape particles Ex. 1} = \frac{N_{\text{tot}}^{\text{rod}} \cdot L_{\text{av}}^{\text{rod}} \cdot D_{\text{av}}^{\text{rod}^4}}{N_{\text{tot}} \cdot L_{\text{av}} \cdot D_{\text{av}}^2} \cdot 100 = \frac{23 \cdot 900 \cdot 68^2}{230 \cdot 413 \cdot 183^2} \cdot 100 = 3.0$$

$$\% \text{ wt rod shape particles Ex. 2} = \frac{N_{\text{tot}}^{\text{rod}} \cdot L_{\text{av}}^{\text{rod}} \cdot D_{\text{av}}^{\text{rod}^2}}{N_{\text{tot}} \cdot L_{\text{av}} \cdot D_{\text{av}}^2} \cdot 100 = \frac{16 \cdot 770 \cdot 78^2}{328 \cdot 325 \cdot 195^2} \cdot 100 = 1.9$$

These values were "absolutely in agreement" with the values reported for examples 1 and 2 of the patent in suit, i.e. 2.8 wt% and 1.9 wt% respectively.

This showed that the argument of the appellant/patent proprietor that the skilled person, based on the disclosure of the patent in suit, would necessarily have concluded that the individual calculation method was to be used had to fail.

XVII. In a communication dated 25 June 2010 the Board drew attention to a number of discrepancies between the preparations carried out by the respondent/opponent and the experimental protocols set out in the relevant documents.

XVIII. In a letter dated 23 July 2010 the respondent/opponent provided explanations with respect to the discrepancies noted by the Board (see section XVII, above).

XIX. In a letter dated 3 August 2010 the appellant/patent proprietor indicated that it agreed with the Board's analysis, and highlighted further deficiencies in the experimental report of the respondent/opponent.

XX. On 16 August 2010 the Board issued a summons to attend a second oral proceedings, scheduled for 28 October 2010.

XXI. In a letter dated 27 August 2010 the respondent/opponent informed the Board that Mrs Poggio would attend the oral proceedings in the capacity of technical expert.

XXII. In a letter dated 28 September 2010 the appellant/patent proprietor informed the Board that Mr Aten would attend the upcoming oral proceedings in the capacity of technical expert.

- (a) With respect to the communication of the Board dated 29 March 2010, sent after the first oral proceedings, and the time line set out therein (see section XV above), it was indicated that since the indicated second communication had apparently not been sent, it was assumed that the upcoming oral proceedings would be restricted to considerations of the probative value of the evidence and that other matters, e.g. sufficiency of disclosure, novelty and inventive step would not be the subject of the oral proceedings.
- (b) Further submissions were made concerning the accuracy of the repetitions of the examples of D1-D3 submitted by the respondent/opponent (see sections XVI-XIX, above).
- (c) With regard to the calculation method it was recalled that two alternatives existed (see sections XV.(c)-(e), above), which the appellant/patent proprietor designated "Method A" and "Method B":

- "Method A": Measuring the dimensions of each particle individually; calculating the individual volumes v_i of each cylindrical particle with l/d ratio greater than 5; adding all volumes v_i to obtain the sum V_i of the individual volumes; dividing V_i by the sum V_t of the individual volumes of all individual particles, thereby obtaining the weight percentage of rod-shaped particles (nb: this corresponding to the second method set out in the communication of the Board dated 29 March 2010 - see section XV.(e), above);
- Method B: measuring the dimensions of each particle individually, calculating the average length and average diameter of the cylindrical particles with a l/d ratio of greater than 5; calculating the overall volume V_{ia} on the basis of the averaged values; then dividing V_{ia} by the volume V_{ta} of all particles (on the basis of the average length and average diameter of all particles) thereby obtaining the average weight percentage of rod-shaped particles (i.e. the first method set out in the communication of the Board- see section XV.(e), above).

The skilled person reading the description of the patent in suit would immediately understand that only Method A could lead to meaningful results. The language in paragraph [0067] and in example 1 of the patent implied to model all particles as cylinders - corroborating that Method A was

disclosed in the patent in suit.

This was even the view reached by Mrs Poggio - the expert of the respondent/opponent in the affidavit of 9 March 2010 (see section XIV, above).

The respondent/opponent attempted to contradict its own expert in its letter of 3 June 2010 (see section XVI, above) by carrying out a calculation on the basis of average values, and concluded, since the results were very similar, that Method B was to be used.

However for example 1 there was a small but profound difference in the amount computed based on the average value (3.0 wt%) compared to that reported in the patent in suit (2.8 wt%). The skilled person knew that for small relative amounts of rod-shaped particles under specific circumstances the (absolute) difference between the results of Method A and Method B might not be large.

Thus, assuming the skilled person would not know whether Method A or Method B was used in the opposed patent - which was disputed in view of the original disclosure and the knowledge of the skilled person - instead of recalculating examples 1 or 2, reference would be made to the examples with higher weight percentage of rods such as example 4 with 14.6 wt% of rod-shaped particles.

According to said example 4 a hand count of 92 particles revealed 5.4% to be rod-shaped. The average length of these particles was 1242 nm, and

the diameter 125 nm.

The average length of all particles was 308 nm and the diameter 177 nm (paragraph [0080] of the patent in suit).

Applying calculation method B gave the following:

$$\%wt\ rod\ shape\ particles\ Ex.4 = \frac{N_{tot}^{rod} \cdot L_{av}^{rod} \cdot D_{av}^{rod^2}}{N_{tot} \cdot L_{av} \cdot D_{av}^2} \cdot 100\% = \frac{0.054 \cdot 92 \cdot 1242 \cdot 125^2}{92 \cdot 308 \cdot 177^2} = 10.9\%$$

Thus applying Method B did not yield the value disclosed in the patent in suit - 14.6 wt% but only 10.9 wt%. From this simple calculation it was immediately evident to the skilled person that Method A had to be employed. This had been confirmed by the expert of the respondent/opponent and was supported by the examples of the patent in suit, in particular example 4.

XXIII. In a communication dated 6 October 2010 the Board clarified that:

- It had sent a communication dated 29 March 2010 setting out a first period of two months (see section XV, above);
- The respondent/Opponent had replied with letter dated 3 June 2010 (section XVI, above);
- The Board sent a further communication dated 25 June 2010 (section XVII, above);
- Both parties replied to this communication - the respondent/opponent on 23 July 2010 (see section XVIII) and the appellant/patent proprietor on 3 August 2010 (section XIX);
- The Board then issued, by communication dated 16 August a summons to attend oral proceedings on 28 October 2010 (section XX, above);

- The communication of the summons initiated the second two month period foreshadowed in the communication of 29 March 2010;
- Accordingly the Board expected the parties to be in a position to deal with all issues of patentability, i.e. Art. 54, 56 and 83 EPC at the oral proceedings.

XXIV. Together with a letter dated 22 October 2010 the appellant/patent proprietor filed an affidavit from Mr Nelson, a technical expert. This described the analysis of Photos 1, 2 and 3 submitted by the opponent with the letter of 3 June 2010 (see section XVI, above) to determine the content of particles having a length to diameter ratio of greater than 5. According to the affidavit the calculations were based on the volumes of each particle individually (cf. "Method A" - section XXII.(c), above).

XXV. The second oral proceedings was held before the Board on 28 October 2010. At the outset of the oral proceedings the respondent/opponent informed the Board that Mrs Poggio was unable to attend. The representative had however been provided with the necessary calculations and would present these at the appropriate juncture.

- (a) Following discussion of novelty in the light of the disclosures of D1-D4 the Board announced its conclusion that the subject matter claimed was novel.
- (b) With respect to sufficiency the Board recalled that both parties had taken contradictory positions with respect to the method of

calculation to be used, and to some extent had even contradicted themselves (cf section XV.(e), above).

Accordingly the parties were invited to make submissions on the question of which method of calculation the skilled person would, in the light of the teachings of the patent in suit, conclude to be the correct one.

- (c) The appellant/patent proprietor recalled its submission of 28 September 2010 (see section XXII.(c), above) according to which a calculation of the data of example 4 using the collective method - "Method B" - yielded a value different from that reported in the patent. This would confirm that the individual method (Method A) was the correct one to use, and thus exclude the collective method (Method B). The extent of the difference between the result obtained by the two methods depended on the content of rod-shaped particles - the divergence being greater at higher contents. In response to an observation of the Board that not only the magnitude of the divergence but also apparently the direction varied (compare results deriving from example 1 and example 4 - sections XVI and XXII.(c), above) the appellant/patent proprietor submitted that although the direction of the divergence could not be predicted in general terms the magnitude thereof increased consistently as the content of rod-shaped particles increased.
- (d) The appellant/patent proprietor further submitted that paragraph [0067] and example 1 of the patent explained the counting method. Paragraph [0067] made clear that in order to model the particles as

cylinders it was necessary to use the individual properties of each particle. The Poggio affidavit was unclear in that the two methods seemed to be combined (see section XIV, above). Thus according to Poggio:

- In the first step the content of rod-shaped particles was determined based on individual particles;
- In the second step the population of particles appeared to have been considered collectively, i.e. Poggio seemed to have assumed that the sum of all particles is equivalent to the sum of the average.

However these two values were not necessarily the same, e.g. if the particles differed greatly in size/shape.

The technical expert of the appellant/patent proprietor submitted that in carrying out such calculations the relevant skilled person would as a matter of course employ a method treating each particle individually and would on no account contemplate a method involving treating the particles collectively.

In any case the information given in paragraph [0067] of the patent in suit relating to modelling the particles as cylinders would confirm that the individual method was to be employed. There was no mention of the use of averages in that paragraph. It was conceded that nevertheless in the patent the values for all particles were not given- only average values were mentioned.

With respect to the findings of the opposition division in paragraph 4.5 of the decision (see section III.(b), above) that the collective method

was to be used the appellant/patent proprietor stated that this matter had not been raised in the statement of grounds of appeal since this was not at that point relevant to the findings of the decision of the opposition division. It had been assumed that everyone would realise that the reasoning of the opposition division on this point had been wrong. In any case this matter had never been raised in the context of sufficiency of disclosure during the opposition proceedings. The significance of this only emerged during the course of the appeal proceedings.

- (e) The respondent/opponent noted that the opposition division had considered that the collective method was to be used, and that the appellant/patent proprietor had not challenged this finding in the statement of grounds of appeal.

The findings of the opposition division with respect to the method demonstrated that, contrary to the position of the appellant/patent proprietor, it would not after all be generally recognised that the individual method was the correct one to use. Even the opponent's own expert - Mrs Poggio - had not entirely recognised the significance of this issue as the Poggio affidavit had failed to distinguish between the two methods but instead employed a hybrid thereof (see section XIV, above). Based on the disclosure of the patent in suit either method could be used. Paragraph [0067] seemed to indicate that the individual method was to be employed. Example 1 of the patent in suit did not specify which method to use but made explicit reference to averages. The data given in the examples did not allow it to be concluded with

certainty which method was to be used, and certainly did not lead to the conclusion that the only method to be used was that involving considering the particles individually. In particular based on example 4 a calculation using the information reported in the patent in suit (based on average values) would give a different content of rods from that reported in the example. This would merely indicate that the method using the average values was incorrect. However a number of different alternative methods were possible, and hence it would not be possible with certainty from this difference to establish which method should instead be employed.

It was only at the previous oral proceedings that the appellant/patent proprietor had even become aware that the calculation method was critical and that different methods might lead to different results. There was no recognition of this in the patent in suit. This showed that the patent did not provide sufficient information to allow the skilled person to carry out the calculation.

On the contrary, the disclosure of the patent in suit of average values strongly suggested that this was the correct basis of calculation otherwise it was not clear why such values had been reported.

Further it was not even possible, on the basis of the raw data given in the patent - in the form of images - to replicate the calculations and on this basis include/exclude the various possible methods. The quality of the images in the patent was insufficient to allow these to be analysed and the particles reliably counted.

The patent proprietor was attempting, *a posteori* to derive a teaching from the patent in suit which simply was not there.

XXVI. The appellant/patent proprietor requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or of the first to eighth auxiliary requests in that order, whereby:

- The main request and first and second auxiliary requests were filed together with the statement of grounds of appeal;
- The third to seventh auxiliary requests were filed with the letter dated 27 January 2010;
- The eighth auxiliary request was filed with the letter dated 9 March 2010.

The respondent/opponent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. *The patent in suit - technical problem - means for solving this*
 - 2.1 The patent in suit is directed to dispersions of non-melt processable fluoropolymers and coatings formed from the dispersions.
 - 2.2 In paragraph [0003] it is explained that the suitability of fluoropolymer dispersions for forming

- thick coatings can be evaluated by the Critical Cracking Thickness (CCT).
- 2.3 Known methods for manufacturing coating compositions of high molecular weight fluoropolymers were expensive and failed consistently to achieve a level of significant CCT without blending two types of dispersion. A non-melt-processable dispersion composition of high molecular weight fluoropolymer with *inter alia* high CCT and ease of application onto metal or glass fabric was desired. Further such dispersions should be easy to manufacture with low batch to batch variations, and should exhibit shear stability so that they could be employed in continuous processes involving recycling of undeposited coating material (paragraphs [0007] and [0008] of the patent in suit).
- 2.4 According to paragraphs [0009] and [0010] of the patent in suit it is required that at least 1.5 wt% and preferably 1.5 to 20 wt%. of the fluoropolymer particles comprise substantially rod-shaped particles i.e. a l/d ratio greater than about 5, This teaching regarding the criticality of the content of rod-shaped particles is repeated and developed in paragraph [0027] and following.
- 2.5 In particular in paragraph [0028] it is taught that dispersions having rod-shaped particles in the specified amounts provide high CCT to the dispersion coatings. Contents of rods that are either too high or too low are reported to be detrimental to the CCT.
- 2.6 Accordingly the patent in suit frames the technical problem it sets out to solve in terms of improving the

CCT of coatings prepared from the dispersions and identifies as the key feature for solving this problem the content of rod-shaped particles.

2.7 Consistently with this presentation, the appellant/patent proprietor has emphasised this aspect throughout the opposition and appeal proceedings as being central to the subject matter claimed. In the opposition proceedings the emphasis was on the presence *per se* of the rod-shaped particles:

- The rejoinder to the notice of opposition, dated 21 July 2006, page 1 section "The Invention", page 11, first complete paragraph where it is emphasised that the technical problem of providing coatings having the desired properties is solved by means of the presence of rod-shaped particles;
- At the oral proceedings (minutes page 4 first section).

However during the appeal proceedings the emphasis shifted its focus to the amount thereof present:

- In section 5.5 of the statement of grounds of appeal it is stated:
 - The proportion or level of needle shaped particles was the key to CCT, and that this feature was of greater significance than the average l/d ratio;
 - A level that was either too high or too low resulted in degradation of the CCT;
 - This explanation was only arrived at following exhaustive experimental work and did not arise in an obvious manner from the state of the art.

2.8 Thus it is the consistent position of the appellant/patent proprietor that ensuring that the dispersions contain rod-shaped particles and that these are present in a specific proportion is the key to realising the promise of the subject-matter taught in the patent in suit.

2.9 The respondent/opponent has also identified this as being central to the claimed invention as witnessed by its submissions in the letter of 12 February 2010 (cf section XII.(b) above).

2.10 Accordingly it is common ground between the parties that the proportion or fraction, expressed as wt%, of rod-shaped particles is a critical feature.

3. *Sufficiency of disclosure - general considerations*

3.1 It is disputed between the parties whether the feature relating to the content of rod-shaped particles was sufficiently disclosed.

3.2 It is helpful to recall the development of the relevant arguments:

3.2.1 During the proceedings before the opposition division and in the initial stages of the procedure before the Board this dispute focussed on the question of analysing the diagrams in order to count and measure the particles (see sections II, III.(b) and (c), V.(d), VI.(b), XI.(b) and XII.(b)).

3.2.2 However in the latter stages, commencing with the submission of the Poggio affidavit (see section XIV,

above) the question of the calculations performed on the data retrieved from the counting was raised see sections XIV, XV.(c)-(e), XVI, XXII.(c), XXIV and XXV (c)-(e).

3.3 The guiding principle in the large body of case law developed with respect to Art. 83 EPC is that the skilled person should, after reading the description be able readily to perform the invention over the whole area claimed without undue burden and without needing inventive skill (cf T 694/92 OJ EPO 1997, 408 reasons 5, final section).

3.4 Accordingly in a first step it is necessary to examine whether the teaching of the patent in suit provides a disclosure of all relevant aspects relating to the determination of the content, expressed as weight %, of rod-shaped particles.

4. *The amount of rod shaped particles - disclosure in the patent in suit*

4.1 According to paragraph [0067] of the patent in suit the content of rod-shaped particles is determined as follows:

- Dispersions are prepared on substrates and images are obtained by scanning electron microscope;
- The images are visually inspected;
- Particles are hand counted;
- Counted particles are modelled as cylinders whose height is the long axis and whose diameter is the short axis;

- Particle dimensions are measured with a ruler in mm and converted to nm using the scale given on the SEM image.

This passage thus teaches only how to obtain the images and how to retrieve the data relating to particle dimensions from the images. There is no teaching here regarding the calculations to be performed on the data.

4.2 In example 1 it is disclosed in relation to the determination of the content of rods (starting at page 13, line 40):

- Typical particle shape is cylindrical with rounded ends;
- A hand count of 230 particles gave a distribution of long and short axis (depicted graphically in figure 4 of the patent in suit):

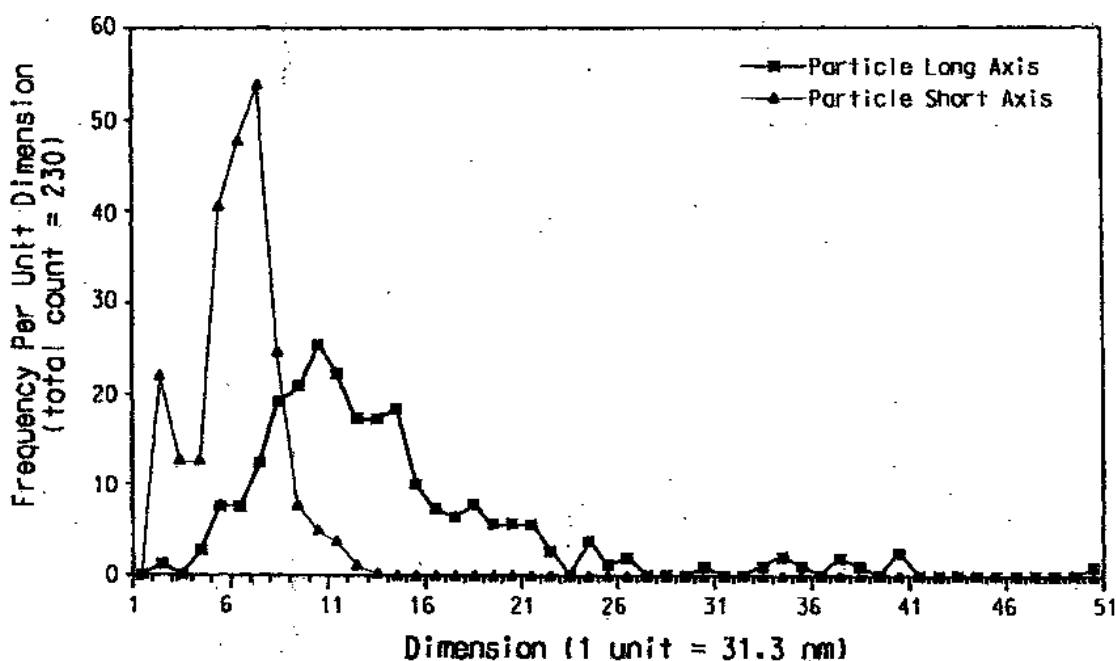


FIG. 4

- Those particles having a ratio of long axis to short axis of greater than 5 comprised 10% by number of particles counted;

- Modelling these as cylinders gave a weight percent of these particles of 2.8 wt%;
- The rod-shaped particles had **average** dimensions of 900 nm of length and 68 nm of diameter;
- The **average** length of all particles was 413 nm and the **average** diameter was 183 nm (emphases of the Board).

Thus the report of this example provides the following information:

- The total number of particles considered (230)
- The proportion of these having a l/d ratio of greater than 5, i.e. rod-shaped particles;
- The weight proportion of these in these particles is reported (2.8 wt%). This language, in particular the use of "these" indicates that the weight percentage is based on the totality of particles analysed i.e. the 230 particles counted.
- The **average** length and diameter of the entire population of particles and of the rod-shaped particles.

4.3 At this stage of the disclosure there is however no explicit statement relating to the calculations carried out in order to obtain the reported figure for weight proportion.

The opposition division understood from the examples of the patent in suit that the reported averaged values were to be used (see section 4.5 of the decision under appeal, reported in section III.(b) above).

This finding was not disputed by the appellant/patent

proprietor either at the oral proceedings before the opposition division or in its statement of grounds of appeal since, according to its submissions at the first oral proceedings before the Board the significance thereof had not been appreciated (see section XV.(c), 5th bullet point, above). The Board however notes the diverging statement made in relation to the same issue at the second oral proceedings before the Board at which the appellant/patent proprietor submitted that the reason for not raising this matter was that it had been assumed that everyone would realise that the reasoning of the opposition had been wrong (see section XXV.(d), above).

4.4 As shown by submissions made by both parties during the appeal procedure, carrying out this calculation on the data provided in the patent in suit would yield results with varying degrees of agreement with the values reported (see sections XVI and XXII.(c), above):

- Based on the data given in example 1 a value diverging upwardly from that reported in the patent in suit would be obtained, i.e. 3.0 wt% instead of 2.8 wt% (see section XVI, above);
- The data of example 2 would yield the same value as that reported in the patent in suit (1.9 wt%) (cf. letter of the respondent/opponent dated 3 June 2010, reported in section XVI, above);
- Employing the data of example 4 would yield a value of 10.9 wt%, thus diverging downwardly from the value reported in the patent in suit (14.6 wt% - cf letter of the appellant/patent proprietor of 28 September 2010- section XXII.(c), above).

4.5 The patent in suit provides no prior art references relating to the determination of the weight percentage of particles of a particular morphology in such dispersions.

This lack of any pertinent prior art references is consistent with the presentation of the patent in suit and the position of the appellant/patent proprietor that the realisation that the content of rod-shaped particles was critical was at the heart of the invention to which the patent in suit relates (see section 2, above, and in particular patent in suit paragraphs [0009], [0010], [0027] and [0028]).

4.6 The argument of the appellant/patent proprietor in its letter of 28 September 2010 (See section XXII, above) that the skilled person would understand, on the basis of paragraph [0067] that only the individual method - "Method A" would lead to meaningful results not only fails to take account of the explicit teaching of the examples of the patent in suit which refer to the average values, but also advances no explanation as to why, despite the absence of any explicit reference to the properties of the individual particles in the patent in suit and apparently in direct contradiction to the explicit teaching of the examples in respect of the average values, the skilled person would assume that the individual values were to be used.

4.7 Accordingly the Board can come to no conclusion other than that, based on the disclosure of the patent in suit itself, there is no sufficient disclosure of the manner in which the content of rod-shaped particles is to be determined.

4.8 Accordingly the patent in suit cannot provide a basis for recognising sufficiency of disclosure (Art. 83 EPC).

5. It thus needs to be investigated whether the skilled person, could by other means, e.g. by reference to common general knowledge, arrive at an understanding of how to determine this feature of the claim.

5.1 As held in T 629/05 (6 July 2007 not published in the OJ EPO, reasons 4) in the assessment of sufficiency of disclosure the skilled person may use common general knowledge to supplement information contained in the application and may even recognise and rectify errors in the description on the basis of such knowledge, the central criterion being that it must be possible to reproduce the invention without any inventive effort and undue burden.

5.2 It appears to be a matter of consensus between the parties that the skilled person would recognise an incoherence, in some cases, in the disclosure of the patent in suit between the reported contents of rod-shaped particles and those which emerge from the data reported relating directly to the properties of the particles (average dimensions).

5.3 The question to be answered is whether the skilled person would on the basis of general knowledge be in a position to supplement the teaching of the patent in suit and so reconcile this incoherence.

5.4 As already explained in section 4 above there is no prior art identified in the patent in suit which could provide a basis for such a rectification.

- 5.5 Regarding the general knowledge of the skilled person, the only evidence available is that provided by the various statements made during the procedure.
- 5.6 The evidence provided by the patent in suit itself is that the inventor was not aware of the significance of the manner of calculating or even of a distinction between different methods.
The statement of the appellant/patent proprietor at the first oral proceeding is consistent with this (see section XV.(c), above).
Interestingly the appellant/patent proprietor appears to have reviewed its position on this by the time of the second oral proceedings (see section XXV.(c) and (d), above) when it was stated that the reason for not commenting on this was that it had been assumed that the skilled person would realise that the calculation on the basis of the average values was incorrect.
- 5.7 According to the expert of the respondent/opponent - as reproduced in the Poggio affidavit it seems that it was also not realised prior to the first oral proceedings before the Board that the manner of calculation, i.e. whether the particles were treated individually or collectively was of significance. On the contrary according to Poggio it appears to have been assumed that the two values were interchangeable (see section XIV, penultimate bullet point).
- 5.8 At the first oral proceedings the confusion over this matter was emphasised since the representatives themselves took positions at odds with the statements of their respective experts (see section XV.(c), (d)

- and (e), above) regarding the manner of calculation. This alone constitutes a strong indication that the skilled person would not have known from other sources which method was to be employed.
- 5.9 The submissions of the appellant/patent proprietor at the second oral proceedings (see section XXV.(c) and (d) above) that the divergences in the results reported in the patent in suit and those obtainable on the basis of the reported average values would reveal that the individual method, not the collective method was to be used relies on making an assumption for which no evidence has been advanced, namely that there are only two methods of calculation possible.
- 5.10 On the contrary there is evidence that the matter is not as clear-cut as implied by the appellant/patent proprietor. This evidence is provided on the one hand by the diverging statements made by the appellant/patent proprietor with respect to the calculation method set out in the decision under appeal (sections XV.(c) and XXV.(c) and (d), above) and by the Poggio affidavit according to which a hybrid calculation was employed in which the rod-shaped particles were treated individually but the entire population was treated collectively, employing average values.
- 5.11 Thus the evidence provided by the submissions of the parties is that these experts were not even necessarily aware that the manner of calculating the content of rod-shaped particles was of significance, let alone that this had to be performed in a highly specific manner.

5.12 The appellant/patent proprietor also argued that the skilled person would not only note that there was a divergence between the reported values for the content of rod-shaped particles and the value that would be obtained based on calculations employing the data reported but would also note that the magnitude of the divergence increased with higher contents of particles, understand the significance of this and thus come to the conclusion that it was necessary to employ the method of treating the particles individually rather than collectively.

Disregarding for the moment that this submission is irreconcilable with the statement made by the appellant/patent proprietor at the first oral proceedings held before the Board that the significance of the calculation method as set out in the decision under appeal had not been appreciated (section XV.(c), above), it is the opinion of the Board that to arrive at such a conclusion, in the absence of any indication of pertinent general knowledge demands of the skilled person, a level of insight and understanding which approaches that required for inventive step. However the pertinent case law emphasises that the same level of skill is to be applied when the questions of sufficiency of disclosure and inventive step are considered (cf T 60/89, OJ EPO 1992, 268, reasons 3.2.5).

5.13 Even accepting, for the sake of argument, that such insight would be within the range of normal, non-inventive ability of the skilled person, there remains the obstacle that the patent in suit itself provides no means by which the validity of such an insight could be

tested.

Raw data is provided only in the nature of images of extremely poor quality. In this connection it is recalled that the images provided by the then opponent during the opposition proceedings (Photos 1-3 - see section II, above) were considered by the appellant/patent proprietor to be of insufficient quality to allow analysis (counting of the particles) notwithstanding that these images appear to be significantly clearer and of higher quality than those contained in the patent in suit.

5.14 Also complete repetition of the examples of the patent in suit does not provide a route - without undue burden - to clarify this aspect since doing so involves multiple stages, each of which is prone to error and thus any divergence could have one of a number of sources, no means being provided in the teaching of the patent in suit to exclude one or other source of error.

5.15 Accordingly the appellant/patent proprietor has failed to show that the skilled person would be in a position to understand the cause of the varying degree of agreement between the reported values of rod content and those values that would be obtained on the basis of calculations performed on the data provided in the patent in suit, and having done so to rectify this based on either common general knowledge or the data in the patent in suit.

5.16 Indeed the Board is aware that the entire foregoing section relies on making a key assumption - namely that the skilled person would identify the nature of the calculation as being the source of the divergences.

This has in fact been assumed by both parties. However this assumption is in the Board's view not valid. For example it takes no account of the possibility of alternative sources of error such as clerical errors in the patent in suit, or even errors in collating and analysing the data, e.g. instrumental errors.

5.17 Thus it has not been shown that the skilled person would necessarily even realise that the calculation method was at the source of the divergences, let alone that the skilled person would be in a position to identify precisely the nature of the problem with the calculation method, how to correct it and, on the basis of the data in the patent in suit, confirm that this was in fact the correct calculation method.

5.18 On the other hand, it is clear that the promise of the invention (PTFE dispersions of higher CCT) is only accessible via a reliable fulfilment of the crucial condition set out in claim 1, namely that:

"at least about 1.5 weight % to about 20 weight % of said fluoropolymer particles comprise substantially rod-shaped particles having a length to diameter ratio of greater than about 5."

which in turn requires the preparation of a dispersion having the correct fraction of substantially rod-shaped particles. However, as shown above, the necessary information to achieve this is absent from the patent in suit.

6. It is therefore concluded that the patent in suit does not provide sufficient information to allow the skilled person to reproduce the claimed invention. Nor is the skilled person in a position - without undue burden and

without inventive effort - to make good this deficit.
Accordingly it has to be concluded that the
requirements of sufficiency of disclosure are not
satisfied.

As the claims of all request rely on the definition of
the content of rod-shaped particles, this objection
applies to all requests.

Accordingly none of the sets of claims on file meets
the requirements of Art. 83 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

E. Görgmaier

R. Young