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**Datasheet for the decision  
of 18 June 2013**

**Case Number:** T 1799/08 - 3.3.07

**Application Number:** 01916318.7

**Publication Number:** 1192302

**IPC:** D01F 6/62

**Language of the proceedings:** EN

**Title of invention:**

Fine denier yarn from poly(trimethylene terephthalate)

**Patent Proprietor:**

E.I. DU PONT DE NEMOURS AND COMPANY

**Opponent:**

Solotex Corporation

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 114(1)

**Keyword:**

"Extent of scrutiny ex officio by the Board"

"Silence of the opponent vis-à-vis a document presented as the closest prior art and experimental results provided by the patent proprietor"

"Public interest and equal treatment of the parties"

**Decisions cited:**

G 0010/91, G 0001/05, G 0008/91

**Catchword:**

see paragraphs 10,11



Case Number: T 1799/08 - 3.3.07

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.07  
of 18 June 2013

**Appellant:** E.I. DU PONT DE NEMOURS AND COMPANY  
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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
1 August 2008 concerning maintenance of  
European patent No. 1192302 in amended form.

**Composition of the Board:**

**Chairman:** J. Riolo  
**Members:** F. Rousseau  
M.-B. Tardo-Dino

## Summary of Facts and Submissions

I. The appeals by the Opponents and the Patent Proprietors lie against the interlocutory decision of the Opposition Division, posted on 01 August 2008 according to which European patent No. 1 192 302 as amended according to the documents of the Second Auxiliary Request submitted during the oral proceedings on 17 July 2008 met the requirements of the EPC.

II. The sole independent claim of that request consisting of fourteen claims read as follows:

"1. A process for making a drawn yarn comprising:

(a) spinning a polyester polymer by melt extruding the polyester in a molten state at a temperature between 255°C and 275°C through a spinneret to form partially oriented feed yarn filaments wherein the polyester polymer has an intrinsic viscosity of 0.80 - 1.5 dl/g and comprises at least 85 mole % poly(trimethylene terephthalate) wherein at least 85 mole % of repeating units consist of trimethylene units ; and

(b) drawing the filaments between a set of feed rolls to produce a denier per filament of 0.5 to less than 1.5 and an actual draw ratio within 10 percent of a predicted draw ratio, wherein the predicted draw ratio is determined according to:  
[(elongation to break of the feed yarn) + 115]/  
[(elongation to break of the drawn yarn) + 115]]."

III. The patent in suit had been opposed in its entirety on the grounds that its subject-matter extended beyond the content of the application as filed (Article 100(c) EPC) and lacked novelty and inventive step (Article 100(a) EPC).

IV. According to the reasons of the decision under appeal, novelty of the process according to the Second Auxiliary Request was acknowledged, as none of the documents cited disclosed a process employing the "actual draw ratio" claimed in the patent in suit for the production of drawn yarns having the claimed filaments' fineness. Inventive step was analysed starting from D7 (JP-A-11 302 922 and English translation thereof) as the closest prior art. The experimental part of the contested patent demonstrated that the claimed process, which included a specific control of the fibre drawing as defined by a filament size of 0.5 to less than 1.5 dpf and a draw ratio within 10% of the predicted draw ratio, provided an improved process and yarns having improved properties. In particular, the objective of providing low denier yarns having a good balance of several physical properties including softness, tenacity, boil-off shrinkage and which could be manufactured reliably with a cost-effective process avoiding or reducing yarn breakage was achieved. This control of the fibre drawing was not suggested in the art, in particular D7 and D2 (JP-A-8-232117 and English translation thereof) and therefore the process according to the Second Auxiliary Request involved an inventive step. The Main Request had not been deemed allowable, because the replacement of the original term "less than about 1.5 dpf" by the range "0.5 to 1.5 dpf" in claim added new

matter going beyond the content of the application as filed. Furthermore, the fibres according to any of Claims 18 and 19 of the First Auxiliary Request lacked novelty over the fibres disclosed in D1 (EP-A-1 209 262). Novelty of the claimed fibres over D2 was acknowledged, as the fibres of the patent in suit spun at lower temperatures than in D2 would not be subject to decomposition like in D2.

V. In preparation of the oral proceedings, the Board issued a communication on 21 December 2011, in which the legal approach to be adopted for assessing novelty and inventive step of subject-matters characterized by an unusual parametric definition was indicated. The implications of this approach for the analysis of novelty of the drawn yarn claimed over prior art D2 and D7 and for the analysis of inventive step of the claimed method over D7, which was considered by the Board in the light of the parties' submissions to represent the closest prior art, was also indicated. In particular, it was pointed out that where claimed subject-matter relies on a newly formulated and hence unfamiliar parametric definition, to express the solution of a technical problem, on the basis of which a patent was requested, the applicant or patent proprietor had the duty of making a full and fair disclosure of his invention to the public so as to establish its contribution to the state of the art which would justify the extent of the patent monopoly sought.

VI. With the letter of 6 February 2012, the Patent Proprietors further submitted Auxiliary Requests 4 to 10, in addition to the sets of claims already submitted

- on appeal. They also requested postponement of the oral proceedings in order to properly address the issues relating to the parametric definition which had been raised in the Board's communication and carry out comparative tests, for which 6 months were needed.
- VII. The Opponents informed the Board with a letter dated 14 February 2012 that they would not attend the scheduled oral proceedings.
- VIII. With the communication of 15 February 2012, the Board informed the parties that the oral proceedings were postponed to 18 June 2013. The Patent Proprietors were invited to provide the additional submissions of which they had given notice by 31 August 2012 in order to provide the Opponents with the opportunity to comment thereon or provide their own tests, should they wish to do so by 31 March 2013.
- IX. The Patent Proprietors submitted said comparative tests and arguments in the light of the latter with letter of 31 August 2012.
- X. The Opponents did not provide any comment on the issues raised in the Board's communication of 21 December 2011. Neither did they respond to the Patent Proprietors' submissions of 31 August 2012, nor did they attend the oral proceedings, despite having been duly summoned. In accordance with Rule 115(2) EPC, the oral proceedings were continued in the Opponents' absence.
- XI. At the beginning of the oral proceedings, the Patent Proprietors withdrew the previous Main and First to Fifth Auxiliary Requests, with the previous Sixth to

Tenth Auxiliary Requests being promoted as their new Main and First to Fourth Auxiliary Request, respectively. Furthermore, four additional sets of claims were submitted as their Fifth to Eighth Auxiliary Requests. The set of claims according to the new Main Request differed from that which was found in the impugned decision to meet the requirement of the EPC, only in that it specified in step (a) the spinning temperature to lie between 255°C and 275°C, that step reading "(a) spinning at a temperature between 255°C and 275°C a polyester polymer by melt extruding ...". At the end of the oral proceedings the decision of the Board was announced.

XII. The submissions of the Opponents can be summarized as follows:

(a) In their statement setting out the grounds of appeal of 28 November 2008, as well as in their rejoinder of 24 April 2009, the Opponents emphasized that D2 constituted the closest prior art for the purpose of assessing inventive step, because it disclosed in claim 1 a poly(trimethylene terephthalate) (hereafter PTT) ultrafine denier yarn, which meant a PTT fine denier yarn, and a method for its production wherein the PTT-partially oriented yarn obtained by spinning at a spinning speed of 2500 to 4500 m/min was drawn at a ratio so that the elongation at break was 20 to 40%, as shown in paragraph [0017]. Moreover, one of the objects and problems to be solved by the invention disclosed in D2 related to the easy production of a PTT ultra-fine denier yarn, the expression "easy production"

meaning decreasing problems such as yarn breakages during a production of PTT ultra-fine denier yarns.

(b) D7 was held to constitute a more remote state of the art, which related to a different technical field, as it concerned PTT modified cross-sectional filaments, but not PTT fine denier yarns. In addition, the technical problem addressed in paragraph [0001] of reference D7 also differed from that of the patent in suit, which was to suppress the excessive yarn breakages during the production of a PTT fine denier yarn.

(c) Accordingly, the problem-and-solution approach relied upon by the Patent Proprietors was improper, since it was based upon reference D7 as the closest prior art.

XIII. The submissions of the Patent Proprietors can be summarized as follows:

(a) The new requests were based solely on method claims, the claims directed to fibres having been deleted. The Main Request corresponded to the previous Sixth Auxiliary Request. A basis for introducing the spinning temperature into Claim 1 could be found on page 5, line 27 of the application as filed.

(b) The inequation given in claim 1 of the patent in suit was based on usual parameters, namely elongation at break of the feed yarn and elongation at break of the drawn yarn. Moreover, it was usual for a physicist to formulate a



relationship between measured usual parameters based on experimental data.

- (c) The skilled person, knowing as illustrated by document D3 that the elongation at break of a partially oriented yarn depended on the spinning speed, was able to provide a PTT feed yarn with a specific elongation at break. Based on the elongation at break of the drawn yarn defined in the client's specification, the simple inequation given in claim 1 of the patent in suit defined a "process window" which allowed then to produce for a given PTT the sought fibre without encountering yarn breakage.
- (d) By selecting process conditions which lay outside of the process window, only fibres with a middle level of breakage could be obtained. This was amply demonstrated by the experimental report submitted with the letter of 31 August 2012, in particular Table 6.2 on page 5 and the graph in Figure 1 of the accompanying letter. The comparative tests provided had been made with a method DY-1b, which was very close to that disclosed with Example 1 of D7. The method of DY-1b employed a feed yarn having the same elongation at break and the same draw ratio as in Example 1 of D7. A drawn yarn exhibiting the same elongation at break was obtained, which meant that the predicted draw ratio for the method according to DY-1b and for Example 1 of D7 were very close and outside of the process window defined in claim 1 of the patent in suit. The value of the elongation at break of the feed yarn had not been

measured, but calculated based on the same method as that used by the Opponents. Hence, one had been able to reproduce Example 1 of D7.

- (e) In contrast to the method of DY-1b, the method according to Example DY-1a fulfilled the inequation of claim 1 and led to an increase of the elongation at break going beyond the value which would have been expected by the skilled person. The effect of this process window on the elongation at break of the drawn fibre was also confirmed with the comparative tests carried on three further feed yarns FY-2 to FY-4, the results of which were summarized in Table 6.2 of the test report submitted on 31 August 2012.
  
- (f) The claimed method was neither disclosed nor suggested by the prior art. The fact that laying inside the process window defined by the inequation defined in claim 1 allowed to obtain the desired fibre, whereas laying outside did not, was surprising for the skilled person.
  
- (g) The Patent Proprietors had reacted to the Board's communication in providing the test reports submitted on 31 August 2012, whereas the Opponents who had had sufficient time to provide their own comparative tests, or to comment on the tests provided with the letter of 31 August 2012, had remained silent. Furthermore, the opponents had not challenged the novelty of the process and it was up to them to show that the claimed subject-matter lacked novelty and inventive step. The

Board's function was not to question the results presented.

(h) The subject-matter of the present claims should therefore be considered to be novel and inventive.

XIV. The Opponents had requested in writing that the decision under appeal be set aside and that the patent be revoked.

XV. The Patent Proprietors requested that the decision under appeal be set aside and that the patent be maintained on the basis of the set of claims of the Main Request (corresponding to the Sixth Auxiliary Request filed on 6 February 2012), or alternatively on the basis of any of the sets of claims of the First to Eight Auxiliary Requests, all filed during the oral proceedings.

## **Reasons for the Decision**

1. The appeals are admissible.

### *Main Request*

2. The set of claims according to the present Main Request differs from that which was found in the impugned decision to meet the requirement of the EPC, only in that it specifies in step (a) of claim 1 that the spinning temperature lies between 255°C and 275°C. The basis for introducing this restriction into claim 1 can be found on page 5, line 27 of the application as filed, as indicated by the Patent Proprietors. Under these

- conditions, and in the absence of any objection by the Opponents, the Board considers that the amended claims according to the Main Request meet the requirements set out in Article 123(2) and (3) EPC.
3. Novelty and inventive step of the method of Claim 1, without any restriction to the spinning temperature, had been acknowledged by the opposition division, with D7 being considered as the closest prior art. In their grounds of appeal and their rejoinder to the statement of appeal of the Patent proprietors, the Opponents did not contest the novelty of the claimed method, only its lack of inventive step over prior art D2, refuting that D7 could constitute a suitable starting point for assessing inventive step.
  
  4. The closest prior art for the purpose of assessing inventive step is generally that which corresponds to a purpose or effect similar to that of the invention and requiring the minimum of structural and functional modifications (Case Law of the Boards of Appeal of the European Patent Office, 6<sup>th</sup> edition, 2010, I.D.3.1). According to paragraph [0004] of the patent in suit, the object of the present invention is to provide fine denier polyester yarns from PTT and a process for their manufacture which does not lead to excessive breaks in the fibres. D7 and particularly its Example 1, also concerns a process for the manufacture of fine denier polyester yarns from PTT, the size of the monofilaments preferably being in the range of 0,5 to 3 denier. This prior art document also specifically addresses and reports to solve the problem of excessive fibre breakage, as indicated in the paragraphs headed "Purpose" and "Effect of the invention" on pages 1 and

31, respectively (the passages indicated refer to the translation of D7), as well as in Example 1 of that document, where spinning is described to be highly stable for 24 hours without yarn breakage. Document D2, which does not provide the skilled person with a more promising disclosure for the purpose of solving the objectives defined in the patent in suit, is even more remote from the claimed method than D7 from a structural point of view, as it employs a higher spinning temperature. Thus, the Board is satisfied, in line with the contested decision and the Patent Proprietors' view, that D7 represents the closest prior art and thus the starting point for assessing inventive step.

5. According to decision G 10/91 of the Enlarged Board of Appeal (OJ 1993, 408, point 18 of the Reasons), the purpose of the appeal procedure inter partes is mainly to give the losing party a possibility to challenge the decision of the Opposition Division on its merits. Moreover, the appeal procedure inter partes is, in contrast to the merely administrative character of the opposition procedure, considered as a judicial procedure, which by its very nature is less investigative than an administrative procedure (see G 10/91, loc. cit., point 18 of the Reasons) and in which opposing parties should be given equally fair treatment (see G 10/91, loc. cit. point 2). Thus, in the present case, it is in principle up to the Opponents to convince the Board that the contested decision to maintain the patent in amended form is incorrect, and that the patentability requirements are not met.

6. Having regard to the finding in the contested decision that the control of the fibre drawing by a draw ratio within 10% of a predicted draw ratio was essential for deciding novelty and inventive step of the claimed method, the Board in the exercise of their power under Article 114(1) EPC and in their duty to decide the individual cases pending before them according to uniformly applied criteria and not in an arbitrary manner (see G 1/05, OJ EPO 2007, 362, point 22. of the reasons) highlighted the issues relating to this unusual parametric definition in the communication of 21 December 2011. The communication in particular addressed the question of who carried the burden of proof when novelty or inventive step was argued to result from such an unusual parametric definition.
  
7. Whereas the Patent Proprietors took into consideration the Board's comments by providing new experimental tests and accompanying arguments supporting their view on novelty and inventive step of the claimed method over D7, the Opponents ceased to take an active part in the proceedings after having received the Board's communication. The Opponents did not even seize the opportunity expressly provided by the Board in its communication of 15 February 2012 to react to any experimental report to be provided by the Patent Proprietors.
  
8. A preliminary discussion during the oral proceedings of the test report submitted by the Patent Proprietors with the letter of 31 August 2012 showed that method DY-1b meant to represent the method disclosed with Example 1 of D7 had been chosen so as to lead to an elongation at break of the drawn yarn EB(DY) of 22% and

an elongation at break of the feed yarn EB(FY) of 89%. Whereas the elongation at break of the drawn yarn EB(DY) of 22% was mentioned in Example 1 of D7, the Patent Proprietors acknowledged at the oral proceedings that an elongation at break of the feed yarn EB(FY) of 89% was not given in Example 1 of D7, but had been calculated based on the measured elongation at break of the drawn yarn EB(DY), the draw ratio DR of 1.8 and the information that the fibre had been stretched at 95% of the maximum stretch ratio, using the equation  $1 + EB(FY) (\%) = (DR/\% \text{ of the maximum stretch ratio})$ .

9. Thus, during the oral proceedings the question arose for the first time whether the use of the above equation was appropriate having regard to the Patent Proprietors' own criticism concerning its use, expressed in their rejoinder of 22 April 2009. Doubts, therefore, arose whether Experiment D1-Yb constituted a fair representation of the closest prior art. The Patent Proprietors, however, argued that it was up to the Opponents to contest the relevance of the test report presented, affirming that the latter credibly showed the novel and inventive character of the claimed invention over prior art D7.
  
10. As indicated in decision G 08/91 of the Enlarged Board of Appeal (OJ 1993, 346, point 10.1 of the Reasons), the public interest in the European patent system is primarily safeguarded by the possibility of filing an opposition. As a matter of general principle it is not the function of the Boards of Appeal to carry out a general review of decisions at first instance, regardless of whether such a review has been sought by the parties (see G 08/91, loc. cit. point 10.2). The

Board observes that in not attending the oral proceedings and in omitting to comment in writing the experimental results submitted by the Patent Proprietors with letter of 31 August 2012, the Opponents did not show any further interest in the pending appeal proceedings. In this respect, it is also of relevance that the Opponents at no point in the appeal proceedings seized the opportunity to provide a line of arguments concerning inventive step starting from prior art D7, despite the fact that this document had constantly been considered as the starting point for assessing inventive step in the contested decision, in the written statements by the Patent Proprietors and in the Board's preliminary written opinion.

11. In view of the character of the inter partes appeal proceedings (see point 5 above), it cannot be expected, that the Board, independently of its preliminary opinion on some of the critical issues for deciding on a ground not properly substantiated by the opponent which initially raised it, fully investigates that ground, in breach of the principle of equal treatment of the parties, and provide on its own, an elaborate and full reasoning, substituting itself for that opponent which remains passive. Under these conditions, the Board did not consider it appropriate to go beyond their initial analysis of the above test report, to question further the credibility of the results provided therewith and to investigate further the inventive character of the claimed method over D7. The Board in particular accepts in the absence of any evidence to the contrary the Patent Proprietors' argument, that the skilled person using the claimed method is able to find the appropriate draw ratio, as



defined in present claim 1, based on the elongation at break of the PTT feed yarn and the elongation at break of the drawn yarn defined in the client's specification, providing a PTT fibre having the required elongation at break without encountering yarn breakage. The existence of this step process using a draw ratio within 10% of the predicted draw ratio, hence, justifies the novel and inventive character of the claimed method.

12. Therefore, there is no case made out by the Opponents that in view of the prior teaching available the skilled person would have arrived at the subject-matter of present claim 1 in an obvious manner. Consequently, the subject-matter of present claim 1 and by the same token that of dependent claims 2 to 14 meets the requirements of Article 56 EPC.

**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 with the order to maintain the patent on the basis of the claims of the Main Request as filed during the oral proceedings, after any necessary adaptation of the description.

The Registrar

The Chairman

I. Aperribay

J. Riolo