

Case Number: T 0815/93 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 19 June 1996

Appellant: Akzo Nobel Faser AG
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Representative: -

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Respondent: 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 announced orally on 4 May 1993, posted 14 July 1993, concerning maintenance of European patent No. 0 245 011 in amended form.

Composition of the Board:

Chairman: C. Gérardin

Members: P. Kitzmantel
J. A. Stephens-Ofner

Summary of Facts and Submissions

I. European patent application No. 87 303 793.1 in the name of E.I. Du Pont de Nemours and Company which had been filed on 29 April 1987, claiming priority from a US application filed on 30 April 1986, resulted in the grant of European patent No. 245 011 on 5 December 1990, on the basis of Claims 1 and 2 reading as follows:

"1. A continuous filament polyester yarn having a DSC endotherm temperature in the range of from 264 to 273 degrees centigrade and having a tenacity at break greater than that expressed by the relationship $t = 79.89 - 0.278T$ wherein T is the DSC endotherm temperature in degree centigrade and t is the tenacity at break in grams per denier (gpd; 1gpd = 0.88 dN/tex)."

"2. A continuous filament polyester yarn spun at a spinning speed of at least 7 Km/min., having a tenacity at break that falls within the area defined by ABCDA in Figure 2 hereof."

II. Notice of Opposition requesting revocation of the patent in its entirety, on the grounds of Article 100(a) EPC was filed by Akzo Faser AG (Opponent I) on 29 August 1991 and by Hoechst AG (Opponent II) on 30 August 1991.

The Opponents contended in particular that the claimed subject-matter lacked novelty and/or inventive step i.a. over the documents

- D1: EP-A-169 415,
D2: G. Perez and C. Lecluse: "High Speed Spinning of Polyethylene Terephthalate (PETP) by Pneumatic Take-up. Physical and Mechanical Properties of Filaments"; 18. Internationale Chemiefasertagung in Dornbirn vom 20 bis 22 Juni 1979,
D3: DE-A-1 660 489, and
D4: US-A-4 134 882.

III. By its interlocutory decision announced orally on 4 May 1993 (written decision date-stamped 14 July 1993) the Opposition Division held that there were no valid grounds of opposition to the maintenance of the patent in suit on the basis of the following amended Claim 1 (being the sole claim of the then main request):

"1. A continuous filament polyester yarn, spun by high-speed spinning at a spinning speed of at least 7 Km/min., having a DSC endotherm temperature in the range of from 264 to 273 degrees centigrade and having a tenacity at break greater than that expressed by the relationship $t = 79.89 - 0.278T$ wherein T is the DSC endotherm temperature in degree centigrade and t is the tenacity at break in grams per denier (gpd; 1 gpd = 0.88 dN/tex)."

The decision held that the subject-matter of the contested patent was novel and involved an inventive step over the cited prior art.

In particular there was no overlap between the subject-matter of Claim 1 of the patent in suit and the disclosure of document D1, because the feature in said Claim 1 of a

spinning speed of at least 7 km/min restricted the scope of this claim to polyesters having an intrinsic viscosity below that required by document D1. For the assessment of inventive step the high-speed spinning processes disclosed in documents D2 and, particularly, D4 were considered to be more relevant than the "split" (or "coupled spin-drawing") process according to documents D1 and D3, which involved a further drawing step. It was, however, considered non-obvious to the skilled person starting from document D4 to obtain yarns having a tenacity at break as high as that required by Claim 1 of the opposed patent, i.e. greater than that expressed by the relationship $t = 79.89 - 0.278T$, by increasing the spinning speed to at least 7 km/min.

Although it was not necessary in view of the positive decision on the main request, the Opposition Division also commented on each of the Patentee's seven auxiliary requests.

IV. On 14 September 1993 the Opponent II (Appellant) lodged an appeal against the interlocutory decision of the Opposition Division and paid the appeal fee on the same day. The Statement of Grounds of Appeal was submitted on 19 November 1993.

IV.1 The Appellant questioned the conclusion in the appealed decision concerning the novelty of the claimed polyester yarns over document D1 by pointing at the newly cited document

D6: EP-A-56 963

which disclosed yarns manufactured at spinning speeds of up to 12000 m/min from a polyester having an intrinsic viscosity of from about 0,48 to about 1,0. From this it followed, so he submitted, that the feature of the minimum spinning speed of 7 km/min in present Claim 1 did not necessarily imply a maximum polyester viscosity below that of the minimum viscosity of 0.90 according to D1 and could not be used, therefore, to distinguish the yarns according to present Claim 1 from those disclosed in D1.

IV.2 He further argued that the subject matter of Claim 1 was also anticipated by the polyester yarns manufactured according to Example III of document D3, having a tenacity of 8,6 g/den and a residual elongation of 37%, because this low elongation would point at a high spinning speed of above 7000 m/min and a resulting high DSC endotherm temperature T, as demonstrated by document D2, Figure 21 and Figure 22, as well as Figure 18. Furthermore, the yarns according to Claim 1 of the patent in suit had at least been obvious over the disclosure in document D3, which, in the Appellant's view, represented the closest state of the art, because D3 in combination with D2 or D6 guided the skilled person towards high speed spun, high tenacity yarns having a desired DSC endotherm temperature.

IV.3 The Appellant also questioned the admissibility under Article 123(2) EPC of a disclaimer introduced during the first instance opposition proceedings into some of the auxiliary requests restricting the intrinsic viscosity of the polyester to less than 0,7.

V. In his response of 5 May 1994 the Respondent argued essentially as follows:

V.1 The sole claim of the Main Request underlying the appealed decision (see Section III above) was maintained as Main Request.

The claims of the Auxiliary Requests 1, 4 and 5 underlying the appealed decision were maintained as Auxiliary Requests 1, 2 and 3. The claims of these requests are as follows:

Auxiliary Request 1: contains as tail-piece added to the claim of the Main Request the disclaimer: "with the proviso that the intrinsic viscosity of the polyester is less than 0.7".

Auxiliary Request 2 comprises the following two claims:

"1. A high speed melt spinning process wherein a continuous filament polyester yarn is melt spun in a path from a spinning pack at a spinning speed of at least 5 km/min controlled by a positively-driving roll involving necking of the filaments at a location below the spinneret, comprising directing gas at a temperature of from 100°C to 250°C into a zone enclosing said path, said zone extending from said spinning pack to a location between the spinning pack and the positive mechanical withdrawal means, maintaining said zone under superatmospheric pressure of less than 98 kPa (1kg/cm²) and increasing the velocity of the gas as it leaves the zone to a level of 1.5 to 100 times the velocity of the filaments, said zone including a venturi through which the filaments pass down out of said

zone, said venturi being located above the neck-draw point, said yarn having a DSC endotherm temperature in the range of from 264°C to 273°C and having a tenacity at break greater than that expressed by the relationship $t = 79.89 - 0.278T$ wherein T is the DSC endotherm temperature in degree Centigrade and t is the tenacity at break in grams per denier (gpd; 1 gpd = 0.88 dN/tex)."

"2. The process of Claim 1, wherein the spinning speed is at least 7km/min."

Auxiliary Request 3: corresponds to Auxiliary Request 2 with the exception that Claim 1 contains as tail-piece the same disclaimer as that added according to Auxiliary Request 1.

V.2 As a preliminary remark the Respondent merely stated that "in consequence of changes in commercial circumstances" he would not be presenting detailed observations nor would he be represented at any oral proceedings.

With respect to the merits of the case he relied mainly upon his previous observations as submitted to the Opposition Division.

He furthermore defended the novelty of the polyester yarns according to Claim 1 of the patent in suit over those disclosed in document D1 by pointing at the following distinguishing features of the claimed invention: (i) much lower intrinsic viscosity, (ii) higher "amorphous orientation" of the fibers and (iii) no need for the use of a chain extender for the polyester.

V.3 The Respondent also expressed his opinion, that the jurisprudence of the EPO according to which process features by themselves could not establish the novelty of the subject-matter of a product-by-process claim, as e.g. set out in T 150/82, T 205/83 and T 248/85 and as also explained in the Guidelines C-III, 4.7b, would be "wrong in law", particularly because it did not reflect the practice in other municipal jurisdictions.

In view of the fact that this would be an extremely important point of law and also in view of some allegedly conflicting decisions of the boards of appeal (T 93/83, T 257/89, T 402/89, T 487/89, T 575/89) the Respondent requested that the question whether a novel process feature could impart novelty to a claim to an otherwise known product should be referred to the Enlarged Board of Appeal.

VI. In a communication dated 15 February 1996 the Rapporteur indicated that with respect to the Main Request he agreed with the Appellant's argument that Claim 1 was not novel over D1 because D6 showed that, contrary to the finding in the appealed decision, polyesters having an intrinsic viscosity of at least 0,90 could be spun at take-up speeds of up to 12000 m/min.

Neither could any of the Auxiliary Requests be allowed because they all, for partly different reasons, contravened Article 123(2) and/or (3) EPC.

VII. The Appellant, in his letter of 4 March 1996, expressed his agreement with the opinion set out in the above-mentioned

communication of the Board, whilst the Respondent did not comment on it.

VIII. The Opponent I has refrained from any action during the appeal procedure.

IX. The Appellant requested that the decision under appeal be set aside and the patent be revoked in its entirety.

The Respondent requested that the appeal be dismissed and the patent be maintained on the basis of the Main Request, or of Auxiliary Requests 1, 2 or 3.

The Respondent furthermore requested referral to the Enlarged Board of Appeal of the following question:

"Can a novel process feature impart novelty to a claim to an otherwise known product?"

Reasons for the Decision

1. The appeal is admissible.
2. Document D6 is admitted into the appeal proceedings under Article 114(1) EPC because it represents readily apparent relevant counter-evidence to the conclusion of the Opposition Division leading during the oral proceedings before this instance to the recognition of the novelty of the subject-matter of Claim 1 of the patent in suit over document D1. The late filing of this document was even more justified, as the above conclusion was at variance with the

opinion of the Opposition Division as expressed in its communication of 14 December 1992 attached to the summons to said oral proceedings.

Main Request

3. *Article 123(2) and (3) EPC*

The only claim of this request combines the features of Claim 1 with one of two independent features of Claim 2, both these claims as granted and both corresponding essentially to their respective versions as originally filed.

The requirements of Article 123(2) and (3) EPC are therefore complied with.

4. *Novelty*

The question at issue is whether document D1 discloses polyester yarn meeting all of the features claimed by the patent in suit.

- 4.1 It is not contested by the Respondent (Patentee) that Runs No. 2, 5, 6 and 12 to 14 of Example 1 of D1 (page 12, line 22 to page 17, line 4, particularly Table 1) as well as Runs 2 to 7 and 10 to 15 of Example 3 (page 18, line 5 to page 22, particularly Table 2) disclose continuous filament polyester yarn having both a melting point "T" (= "DSC endotherm temperature": see D1, page 10, lines 30 to 34) in the range of from 264 to 273°C and a tenacity at break [g/den] greater than that expressed by the

relationship $t = 79,89 - 0,278T$ (see synopsis of the data submitted with the letter dated 26 August 1991 by Opponent I).

In order to delimitate the claimed subject-matter against this disclosure in D1, the Patentee has, during the first instance opposition proceedings, introduced into Claim 1 the process feature "spun by high-speed spinning at a spinning speed of at least 7 Km/min."

The latter feature is not disclosed in D1, where the maximum "Take-up speed" of the undrawn fibre is 6000 m/min (Runs 8 according to Tables 1 and 2, pages 15 and 20, respectively).

- 4.2 The question, with respect to novelty, is thus whether this feature is able to distinguish the yarns according to the patent in suit from those disclosed in D1, either by the process feature itself or by any (structural) characteristic caused thereby in the yarn.
- 4.3 Pursuant to the established case law of the Boards of Appeal, which is also reflected by the Guidelines C-III, 4.7b, a process feature can only contribute to the novelty of a product claim insofar as it gives rise to a distinct and identifiable characteristic of the product.
- 4.3.1 This concept was confirmed in T 150/82, Reasons 8, last sentence (OJ EPO 1984, 309) in the following way:
"Nevertheless before such [product-by-process] claims are allowable, their patentability, as product must be

established since such definition is **in lieu** of the normal definition by structure."

In the Reasons 6.4, last 10 lines of T 248/85 (OJ EPO 1986, 261) the same idea was expressed by the statement that "Such method of definition of the product [by reference to the process by which it is produced] is not relevant to the question of novelty, once it is established, or in the present case admitted, that such a product is part of the state of the art for the purpose of Article 54 (1) EPC."

In T 205/83, Reasons 3.2.1, paragraphs 2 and 3 (OJ EPO 1985, 363) this line of argument was further developed by saying: "To establish novelty [of the polymeric product of a process], it will be necessary to provide evidence that modification of the process parameters results in other products" and by pointing out that such evidence may be constituted by "conclusive considerations which accord with the general state of the art" or by demonstrating "distinct differences in the products' properties", because "differences in the properties of products indicate a structural modification."

- 4.3.2 The Respondent argued that the above decisions would be at variance with some other decisions of the boards of appeal. As set out below, none of these latter decisions does in fact support this allegation of the Respondent:

In T 93/83 of 25 November 1986 the Board 3.3.1 (unpublished in OJ EPO), in a case where the closest prior art related to an ethylene copolymer which met all criteria of the claimed copolymer except for different process parameters,

held that further comparative tests were required to establish whether these process parameters led to a novel product (Reasons 4.4 to 4.6). Thus, this decision confirms the position that new process features by themselves cannot establish novelty.

The same conclusion applies to T 257/89 of 25 October 1991 (unpublished in OJ EPO) where the Board 3.2.2 found that the product of a melt pultrusion process was novel over the product of a solution pultrusion process because the latter "in contrast to the claimed **structure**" (emphasis added) was not substantially free of solvents (Reasons 5).

In T 487/89 of 17 July 1991 (unpublished in OJ EPO) Board 3.3.3 upheld the decision of an opposition division refusing a claim directed to a polyhexamethylene adipamide fibre because it lacked an inventive step, although the claim had been amended by the incorporation of process features (see Sections III, VI and 7). Novelty was not at issue in this case (cf. Section 5) and the opinion of the present Respondent that novelty was recognized on the basis of a process feature (point 13. of the Respondent's facsimile of 26 March 1993 filed in opposition proceedings) is plainly wrong.

According to T 575/89 of 24 July 1990 (unpublished in OJ EPO) the non-obviousness of a propylene-ethylene random copolymer, which differed from the prior art in its ethylene content as well as by some aspects of its method of preparation (penultimate paragraph of Section 4), was acknowledged by the Board 3.3.3. The fact that in this case the non-obviousness of a structurally different copolymer

was recognized on the basis of the non-obviousness of its manner of preparation is totally unrelated to the issue under discussion here, i. e. whether a new process feature can by itself be regarded as distinguishing feature of a product.

The same applies to T 402/89 of 12 August 1991 (unpublished in OJ EPO) where the Board 3.3.1 in Section 2 of the reasons discusses the question whether the change from a product to a process claim in opposition proceedings offends against Article 123(3) EPC.

4.3.3 The Respondent's request for a referral of the problem of the importance of process features for the definition of a product (see Section V.3 above) cannot, thus, be justified by the existence of "conflicting" decisions (see Respondent's letter of 5 May 1994, page 3, 2nd paragraph).

Neither can the Board accept the validity of the argument that different jurisprudence in some countries ("age-old Anglo-American practice": Respondent's above mentioned letter, page 2, last paragraph) requires such a referral. The law codified in the EPC and its application by the EPO is distinct, separate, and sui generis.

4.3.4 The feature of the minimum spinning speed introduced into Claim 1 of the patent in suit cannot, thus, by itself contribute to the novelty of the yarns according to this claim.

- 4.4 As set out below this process feature is also unable to make the yarns according to Claim 1 of the patent in suit structurally distinguishable from those disclosed in D1.
- 4.4.1 The Respondent argued, and this argument was accepted in the appealed decision on the basis of the evidence then available, that polyesters having an intrinsic viscosity of at least 0,90, this being the minimum viscosity of the polyester fibres disclosed in D1 (page 4, lines 13 to 16), could not be spun to filament yarns by a spinning process using a minimum spinning speed of 7 km/min as required by present Claim 1 (appealed decision, Reasons, Section 3, 3rd paragraph).
- 4.4.2 However, document D6, newly submitted by the Appellant during the appeal proceedings, discloses that fibres can be prepared from polyesters having an intrinsic viscosity "in the range of about 0.48 to about 1.0" (claim 1; page 8, lines 11 to 13). Since, according to page 15, paragraph 3 of D6 the spun filament, having passed an "aspirator", is "wound at a speed of at least about 5,000 m/min., preferably less than about 12,000 m/min." (see also page 16, last paragraph), the contention referred to in the previous paragraph cannot be sustained. Rather these statements in D6 appear to demonstrate that under adequate circumstances, implying as an integral part the use of an "aspirator" in order to "generate a stream in a direction parallel to the running filament" (page 14, lines 2 to 4), polyesters having an intrinsic viscosity in excess of 0.90 (lower limit according to D1), here up to 1.0, can be spun at a speed in excess of 7 km/min, here up to 12 km/min.

Since, according to the subject-matter of the application in suit the pulling away of the filaments from the spinneret is, similar to the function of the "aspirator" in D6, accomplished with the aid of a gas stream ("venturi": patent specification, page 3, lines 2 to 9; page 3, line 59 to page 4, line 3; Figure 1), the spinning conditions according to the patent in suit and according to D6 are similar enough to make it probable that, the former conditions allow the spinning at a speed of at least 7 km/min of polyester filaments having an intrinsic viscosity of at least 0,90. In consequence, the feature in present Claim 1 of the minimum spinning speed of 7 km/min cannot be considered to imply a limit for the intrinsic viscosity of the polyester of below 0.90, and cannot, thus, be regarded to distinguish the filament yarns according to Claim 1 of the patent in suit from those disclosed in D1.

That the patent in suit does not explicitly disclose such high viscosities cannot affect the above conclusion as long as there is nothing in the original disclosure which may be legitimately construed to exclude such high viscosities.

The evidence represented by D6 therefore shifts the onus of proof back on the Patentee/Respondent (see e.g. T 279/84 of 29 June 1987, Reasons 4.2 and 5). Since, however, he did not reply within the set time limit (nor later) to the respective objections communicated to him by the Rapporteur of the Board on 15 February 1996, he failed to discharge this onus.

4.5 The Respondent has pointed at further differences between the fibres according to the patent in suit and those

according to D1, i.e. different degrees of "amorphous orientation" and a different structure of the polyester (presence or not of chain extenders). These features are not referred to in Claim 1 and cannot, therefore, have any impact on the novelty situation of the claimed subject-matter, irrespective of whether, theoretically, they could serve to distinguish the fibres of the patent in suit from those according to D1.

- 4.6 In these circumstances, the disclosure of document D1 is considered to anticipate the subject-matter of Claim 1 (sole claim) of the Main Request.

Auxiliary Request 1 (Auxiliary Request 1 of the appealed decision)

5. The proviso introduced into the claim of the Main Request, namely that the "intrinsic viscosity of the polyester is less than 0.7" is not based on the disclosure of document D1. The figure 0.7 appearing on page 7, line 13 of D1 relates to the precursor polyester to be further reacted with a "polymerization degree increaser".

Since a foundation for the proviso in the original application of the opposed patent is also lacking, this request does not comply with the requirement of Article 123(2) EPC, namely that the European patent may not be amended in a way that it contains subject-matter which extends beyond the content of the application as filed.

Hence, this request is not allowable.

Auxiliary Request 2 (Auxiliary Request 4 of the appealed decision)

6. For the following reasons, this request offends, in various respects, the provisions of Article 123(2) and (3) EPC and is therefore, contrary to what was said in the appealed decision (Reasons 5.4), also inadmissible:

6.1 The statement in Claim 1: "spinning speed of at least 5 km/min. **controlled by** a positive mechanical withdrawal means." is inconsistent with the original application.

According to page 7, lines 6 to 9 of the original application "The filaments are **pulled** from the spinneret by withdrawal roll 34..."

The word "controlled" is open to interpretation that might be different from the very straightforward meaning of "pulled". This word, therefore, not only goes beyond the original disclosure, but extends also the scope of protection beyond that of the patent as granted (Article 123(3) EPÜ).

6.2 The statement in Claim 1: "directing gas at a temperature of from 100°C to 250°C into a zone enclosing that path, said zone extending from said spinning pack to a location between the spinning pack and the positively-driving roll..." is inconsistent with the original application and thus in contravention of Article 123(2) EPC.

According to page 7, lines 30 to 31 of the original application "The temperature of the gas **in the enclosed zone 12** may be from 100°C to 250°C" (emphasis added).

It is clear from Figure 1 that "the enclosed zone 12" does not extend to the "positively driving roll 32" (nor to the "withdrawal roll 34" which was possibly the intention of the draughtsman of the original application). This is also confirmed by the statement at page 4, lines 29 to 30 of the original application "... that the filaments pass down **out of said zone** through a venturi ..." (emphasis added).

Furthermore, it results clearly from the cited passage at page 7 that the temperature range of 100-250°C applies to the temperature **existing in** the zone 12 and not the temperature of the gas that is **introduced**.

- 6.3 The statement in Claim 1 "**maintaining** said zone under superatmospheric pressure of less than 98 kPa (**1 kg/cm²**) ..." (emphasis added) is inconsistent with the original application and offends thus against the requirement of Article 123(2) EPC.

According to page 8, lines 18 to 24 of the original application the pressure **in** the housing 10 is normally "between about 0.05 psig (0.003 kg/cm²) to 1 psig (0.07 kg/cm²)..."

According to page 4, lines 25 to 29 "said gas is **directed**, under a controlled positive pressure of less than 1 kg/cm²,

into an enclosed zone ... and maintained under superatmospheric pressure ..." (emphasis added).

- 6.4 The statement in Claim 1 "increasing the velocity of the gas **as it leaves the zone** to a level of 1.5 to ..." (emphasis added) is inconsistent with the original application and does not, therefore, comply with the requirement of Article 123(2) EPC.

According to page 5, lines 1 to 4 of the original application "The velocity of heated air or other gas **in** the venturi may be about one and one half (1.5) to" (emphasis added).

Auxiliary Request 3 (Auxiliary Request 5 of the appealed decision)

7. For the reasons set out above, Claim 1 of this request, which is a combination of Claim 1 of Auxiliary Request 2 with the disclaimer introduced according to Auxiliary Request 1, which elements are both inadmissible under the provisions of Article 123(2) and/or (3) EPC (see preceding Sections 4 and 5), is also inadmissible under the same provisions.

Conclusion

8. In view of the above, the Main Request is not allowable because of lack of novelty of the subject-matter of its sole claim, and each of the Auxiliary Requests 1, 2 and 3

fails to comply with the requirements of Article 123(2) and/or (3) EPC.

Thus, none of the existing requests can be allowed.

Patentability of the subject-matter of the Auxiliary Requests 1, 2 and 3

9. Although, in view of the inadmissibility of all these requests for formal reasons, there is no need to render a decision on their merits, the Board deems appropriate to point out that, according to the state of the case, none of these requests appears to relate to subject-matter involving an inventive step. Brief reasons for this conclusion have been given in Sections 3.2, 4.2 and 5 of the Rapporteur's preliminary opinion of 15 February 1996, upon which the Patentee did not comment.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.
3. The Respondent's request for referral to the Enlarged Board of Appeal of the question "Can a novel process feature impart novelty to a claim to an otherwise known product?" is refused.

The Registrar:

The Chairman:

E. Görgmaier

C. Gérardin