

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen

D E C I S I O N
of 27 october 1994

Case Number: T 0405/91 - 3.3.3

Application Number: 83108545.1

Publication Number: 0102612

IPC: C08G 63/06

Language of the proceedings: EN

Title of invention:

Process for producing wholly aromatic polyesters

Patentee:

Kabushiki Kaisha Ueno Seiyaku Oyo Kenkyujo

Opponent:

BASF Aktiengesellschaft, Ludwigshafen
HOECHST AKTIENGESELLSCHAFT

Headword:

Relevant legal provisions:

EPC Art. 54(3), (4), 56

Keyword:

"Novelty and inventive step (yes) after amendment"

Decisions cited:

Catchword:



Case Number: T 0405/91 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 27 October 1994

Appellant: Kabushiki Kaisha Ueno Seiyaku Oyo Kenkyujo
(Proprietor of the patent) 2-31, Koraibashi
Higashi-ku
Osaka-shi
Osaka-fu (JP)

Representative: Glaeser, Joachim, Dipl.-Ing.
Patentanwalt
Postfach 80603
D-80603 München (DE)

Respondent 1: BASF Aktiengesellschaft, Ludwigshafen
(Opponent 1) Patentabteilung C6
Carl-Bosch-Strasse 38
D-67056 Ludwigshafen (DE)

Respondent 2: HOECHST AKTIENGESELLSCHAFT
(Opponent 2) Zentrale Patentabteilung
Gebäude F 821
D-65926 Frankfurt am Main (DE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office dated 14 February 1991,
issued in writing on 12 April 1991 revoking
European patent No. 0 102 612 pursuant to
Article 102(1) EPC.

Composition of the Board:

Chairman: C. Gérardin
Members: H. H. Fessel
W. M. Schar

Summary of Facts and Submissions

- I. The mention of the grant of European patent No. 0 102 612 in respect of European patent application No. 83 108 545.1 filed on 30 August 1983 claiming a JP priority of 2 September 1982 (JP 151711/82) was announced on 22 June 1988 (cf. Bulletin 88/25).
- II. Two Notices of Opposition were filed on 18 and 22 March 1989 by BASF-Aktiengesellschaft (Opponent 1) and Hoechst Aktiengesellschaft (Opponent 2) respectively alleging lack of novelty and of inventive step (Article 100(a) EPC).

The oppositions were supported by:

- (1) EP-A-1 102 160,
- (2) DE-A-30 14 925, and
- (3) US-A-4 347 349.

The Opponents argued that the claimed subject-matter was not novel with regard to document (3) (Article 54(2) EPC) and furthermore not novel with regard to document (1) within the meaning of Article 54(3) EPC for some of the designated Contracting States. Apart from the objection against novelty the claimed subject-matter did not involve an inventive step.

- III. With a decision given at the end of Oral Proceedings held on 14 February 1991 and issued on 12 April 1991 the Opposition Division revoked the patent on the grounds that the claimed subject-matter as defined in the main and the subsidiary requests filed during opposition proceedings, both comprising two versions A and B, did not meet the requirements of Articles 54, 56 and 123(2) EPC.

IV. On 29 May 1991 an appeal was lodged together with payment of the prescribed fee by the Patentee (Appellant). The Statement of Grounds of Appeal was received on 12 August 1991. In that statement the Appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the main or the subsidiary request filed during opposition proceedings.

As to the admissibility of the objected feature "not more than 18 mole % of moiety IV" in the claims of the subsidiary request the Appellant agreed that that feature was not explicitly mentioned in the application as originally filed and the patent as granted. It maintained, however, that the disclosure of that feature was implicit in the range of "less than 20 mole% of moiety IV" indicated therein. The subject-matter of the main request was also novel with regard to document (2) since the upper limit of "less than 20 mole%" was not within the range of "about 20 to 40 mole%" mentioned in the citation. Novelty of the subject-matter of the subsidiary request needed not to be discussed since the said amount was "not more than 18 mole%". Moreover the Appellant disputed that a combination of (2) and (3) would lead a person skilled in the art to the claimed subject-matter.

V. The Respondents (Opponents) argued that the Appellant had only provided arguments already dealt with by the Opposition Division (Opponent 1) or provided further documents

(4) US-A-4 256 624 and

(5) US-A-4 161 470,

to support the objection of lack of inventive step (Opponent 2).

VI. The Appellant, thereafter, filed on 21 September 1992 two new claims, each comprising a version A and a version B, to be considered as main and auxiliary requests.

Oral Proceedings were held on 27 October 1994. Both Respondents, which had been duly summoned, had informed the Board beforehand with letters dated 18 August and 21 September 1994 that they would not attend those proceedings. After the Board had informed the Appellant that in its view the content of the subject-matter of the claims now on file extended beyond the content of the application as filed, the Appellant withdrew its former requests and filed a new request based on a claim version A and B alleged to be based on the disclosure given by the Examples and reading as follows:

Version A for Contracting States BE, CH, LI:

"A process for producing a melt-processable wholly aromatic polyester which consists essentially of the recurring moieties I, II, III and IV wherein

- I is 4-hydroxybenzoyl being present in an amount of 30 to 65 mole %,
- II is dihydroxyaryl derived from hydroquinone, 4,4'-biphenol, naphthalene-2,6-diol and mixtures of the foregoing, being present in an amount of 10 to 30 mole %,
- III is dicarboxyaryl derived from terephthalic acid being present in an amount of 10 to 30 mole %, and
- IV is 2-hydroxy-6-naphthoyl being present in an amount of 2 to 15 mole %,

by heating the I, II, III and IV moieties-forming derivatives at a temperature of from 150 to 400°C, optionally in the presence of a heat medium and optionally by using a vacuum."

Version B for Contracting States DE, FR, GB, IT, NL differs therefrom in that in the definition of moiety IV an amount of 3 to 15 mole % is disclaimed by introduction of the wording "excluding 3 to 15 mole %".

In support of the patentability of that subject-matter the Appellant argued that it was an object of the patent in suit to provide a process for preparing polyesters which at high temperatures had a high dimensional stability (cf. column 1, lines 38 to 41 of the patent specification), whereas (2) related to a polyester being easily processable at lower temperatures. Neither (2) alone nor when combined with (3), which concerned a polyester with a completely different composition, could give any hint to the claimed solution.

VII. The Appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the claims provided during oral proceedings.

The Respondents requested that the appeal be dismissed and the case be decided on the file as it stands.

Reasons for the Decision

1. The appeal is admissible.
2. In the present case a decision in the absence of the Respondents is possible since they had the opportunity to present their comments on the subject-matter claimed in the claims provided on 21 September 1992, which had a broader scope than the subject-matter of the claims now on file.
3. The Board has examined the documents (4) and (5) referred to by Respondent 2 for the first time in the Counterstatement of Appeal filed on 2 March 1992 in order to determine their relevance, namely their evidential weight compared with that of the documents filed in time, and has found that they were not sufficiently relevant to be taken into consideration. These documents, therefore, will be disregarded hereinbelow pursuant to Article 114(2) EPC.
4. The wording of the claim does not give rise to any objection having regard to Article 123(2) EPC.

In the absence in the description of the patent specification of the general ranges specifying the amounts of the starting compounds giving rise to the recurring moieties I to III, one has to rely on the values mentioned in the examples, namely Examples 3 to 6 and 8 as originally filed and as granted. In the said examples the moiety I-forming derivative p-acetoxy benzoic acid is used in an amount of 30 mole % (ex.3 and 4), of 38 (ex.5), of 45 (ex.8) and of 65 mole % (ex.6).

As dihydroxyaryl moiety II-forming derivative hydroquinone diacetate in an amount of 20 (ex.8) and of 30 mole % (ex.5); 4,4'-biphenol diacetate in an amount of 30 mole % (ex.3) and of 10 mole % (ex.6); and 2,6-bisacetoxy-naphthalene in an amount of 30 mole % (ex.4) are specified.

30 mole % of dimethyl terephthalate (moiety III-forming derivative) are used in Examples 3 to 5; the amounts of terephthalic acid used in Examples 6 and 8 are respectively 10 and 20 mole %.

As moiety IV-forming derivative is disclosed 2-acetoxynaphthalene-6-carboxylic acid in amounts of 2 (ex.5), 10 (ex.3 and 4) and 15 mole % (ex.6 and 8).

The Board is thus satisfied that the provisions of Article 123(2) and also those of Article 123(3) EPC are met since there is enough support for the amendments and the scope of the claim was clearly delimited during Opposition Proceedings. The disclaimer for version B results from a novelty destroying document within the meaning of Article 54(3) and (4) EPC, i.e. document (1), and is thus not objectionable.

5. The claimed subject-matter is novel over the cited prior art since a process to produce a polyester having the recurring moieties I to IV in the amounts specified in the claims versions A and B is not mentioned therein. In particular, the disclaimer of the amount of 3 to 15 mole % in version B ensures that the teaching of document (1) is no longer novelty destroying.
6. The Board considers (2) to represent to closest state of the art. This document relates to wholly aromatic polyesters consisting of moieties I, II, III and IV within the meaning of the patent in suit. If for the

sake of comparison the same symbols are used as in the patent in suit, it appears that moiety I is present in an amount between 25 and 40 mole %, moiety II between 15 and 25 mole %, moiety III between 15 and 25 mole %, and moiety IV between 20 and 30 mole % (loc.cit.claims 4 and 5.) These products are used to produce shaped products with high quality when melt spun or melt extruded at temperatures below about 320°C (loc.cit. page 8, last paragraph). At high temperatures, however, the behaviour of such polyesters cannot be regarded as entirely satisfactory.

In view of that shortcoming the technical problem underlying the patent in suit was to provide a polyester which at high temperatures has a higher dimensional stability and does not tend to decompose in the molten state.

According to the patent in suit this problem is to be solved by using lower amounts of 2-hydroxy-6-naphthoyl (moiety IV) derivative, as specified in the two versions of the claim, for the preparation of the polyester.

In view of the experimental data provided with Appellant's letter received 21 December 1989 (e.g. Table III) the Board is satisfied that the above problem is effectively solved by applying the process as claimed.

7. It has now to be considered whether the given solution involves an inventive step, in particular whether the documents relied upon by the Respondents provide an incentive to reduce the amount of recurrent moiety IV in the polyester.

Document (2) seeks to improve melt processability of wholly aromatic polyesters having e.g. about 20 to 40 mole % of naphthoyl moieties according to the broader

definition in claim 1. This document is silent on dimensional stability at high temperatures and can thus not provide any hint to the solution of the above problem. There is in fact no reason to depart from the general teaching of that citation, since amounts of recurrent unit IV higher than 20 mole % are said to be generally preferred (page 12, paragraph 3).

Document (3) relates to three or four moieties containing wholly aromatic polyesters having melting points in a range suitable for melt spinning and showing a good homogeneity but not requiring 4-hydroxybenzoic acid as essential moiety. This was said to be achieved by the addition of small amounts of 6-hydroxy-2-naphthoic acid. As to the characteristics of the filaments it is said that they have a high modulus as-spun and high tenacity upon heat treatment. The document is silent as to dimensional stability of the polyesters. Document (3) alone can thus not hint at the solution of the above defined problem nor would a person skilled in the art combine the teaching given therein with that of document (2) when seeking to solve it.

The claimed subject-matter thus involves an inventive step.

8. As far as Example 7 is concerned, the Board considers 15 mole % of m-acetoxybenzoic acid not to represent an unessential amount within the meaning of the claim and thus regards this example being outside the claimed scope.

-
- 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 request as filed during the oral proceedings and a description yet to be adapted.

The Registrar:


E. Görgmaier

The Chairman:


C. Gérardin