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D E C I S I O N
of 2 March 2000

Case Number: T 1168/97 - 3.3.3

Application Number: 91302917.9

Publication Number: 0450932

IPC: C08G 63/60

Language of the proceedings: EN

Title of invention:
Melt-processable polyester capable of forming an anisotropic melt which exhibits a highly attractive balance between its molding and heat deflection temperatures

Applicant:
HOECHST CELANESE CORPORATION

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 84, 123(2)

Keyword:
"Claims (main request) - clarity (no)"
"Amendments (auxiliary request 1) - deletion of feature (no)"
"Amendments (auxiliary request 2) - correction of errors (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1168/97 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 2 March 2000

Appellant: HOECHST CELANESE CORPORATION
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 30 June 1997 refusing European patent application No. 91 302 917.9 pursuant to Article 97(1) EPC.**

Composition of the Board:

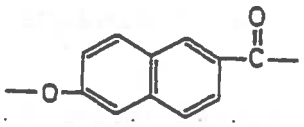
Chairman: C. Gérardin
Members: A. Däweritz
J. De Preter

Summary of Facts and Submissions

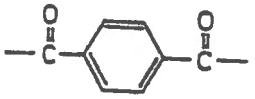
I. European patent application No. 91 302 917.9, filed on 3 April 1991, claiming the priority of 4 April 1990 of an earlier application in the United States of America (504310) and published under No. 0 450 932 on 9 October 1991, was refused by a decision issued in writing on 30 June 1997.

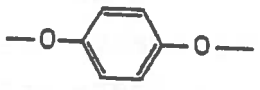
The decision was based on a set of 13 claims submitted with a letter dated 12 April 1996, which was received on 15 April 1996, Claim 1 reading as follows:

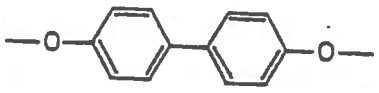
"1. A melt-processable polyester capable of forming an anisotropic melt phase at a temperature below 375°C and capable of forming a molded article which exhibits a heat deflection temperature of at least 250°C, such polyester consisting essentially of the recurring moieties I, II, III, IV, and V wherein:

I is  .

II is  .

III is  .

IV is  , and

V is  , and

wherein said polyester comprises 2 to 5 mole percent of moiety I, 58 to 62 mole percent of moiety II, 16.5 to 20 mole percent of moiety III, 1.5 to 11 mole percent of moiety IV, and 11.5 to 22 mole percent of moiety V, with the proviso that the molar concentration of moiety III is substantially the same as the total molar concentration of moieties IV and V."

Claims 2 to 8 related to preferred embodiments of the melt-processable polyester according to Claim 1. In Claims 9 to 11, fibers, films and articles prepared from the above polyester were claimed. Claim 12 concerned a molding compound comprising the above polyester, and Claim 13 defined a method for the production of a melt-processable polyester, which comprised forming a copolymer from organic monomer compounds in such a way that the resulting product had the composition and the properties of the polyester as required in Claim 1.

II. The reason for the decision was lack of inventive step with regard to the disclosure of three documents.

Although an objection under Article 84 EPC (lack of clarity) was also raised by the Examining Division, it was explicitly stated not to be a ground for the decision.

III. On 4 September 1997, a Notice of Appeal was lodged by the Appellant (Applicant) together with payment of the prescribed fee. The Statement of Grounds of Appeal was received on 7 November 1997 in which the Appellant disputed the reasons for the refusal. The claims as received on 15 April 1996 were upheld.

IV. In an annex to the summons to oral proceedings, dated 18 August 1999, some issues to be taken into account were addressed, in particular the question of lack of clarity due to the fact that the molar concentrations of moieties III, IV and V in Claims 1 and 13 appeared to be inconsistent with the proviso in these claims.

V. In a reply dated 23 December 1999, additional evidence and two auxiliary requests 1 and 2, each containing 13 claims, were submitted. This submission was received twice, on 24 and on 29 December 1999. The amendments in these requests were as follows:

(i) In auxiliary request 1, the proviso was deleted from Claims 1 and 13,

(ii) in auxiliary request 2, the upper limit of the range of moiety IV was limited to 8.5 mol %, that of moiety V to 18.5 mol % in Claims 1 and 13.

In support of these auxiliary requests, the following arguments were presented:

(iii) Auxiliary request 1: if the proviso induced lack of clarity, its deletion would be appropriate, in particular as the proviso did not appear to be necessary in order to distinguish the invention patentably from the cited art.

(iv) Auxiliary request 2: the maximum percentage for moiety IV (8.5 mol %) was obtained by subtracting the minimum percentage for moiety V from 20 mol % (being the maximum percentage for moiety III), consistent with the proviso. The percentage of moiety V was amended in the same way.

VI. In a further letter received on 14 February 2000, the claims received on 15 April 1996 were identified as main request, another request referred to as auxiliary request 1-A containing 13 claims was filed, wherein the upper limit of the range of moiety III was amended to 23.5 mol % in Claims 1 and 13, and arguments justifying the wording of auxiliary request 1-A, as well as additional arguments in support of the main request and of auxiliary requests 1 and 2 were provided:

(i) Main request: a person skilled in the art would readily determine whether a given polymer fulfilled all requirements of Claim 1. If it did not contain all elements the polymer would not fall within the terms of Claim 1.

(ii) Auxiliary request 1: the proviso served only the purpose to ensure that the hydroxyl and the carboxylic acid groups in the polymer were stoichiometrically balanced. In practice, since this requirement had to be met in a condensation reaction, the proviso would be, in fact, superfluous. The polymer would not form unless the amount in mols of carboxylic acid in the polymer from moiety III was equal to the amount in mols of hydroxyl groups in moieties IV and V. Therefore, no additional limitation was added by the proviso and hence no new matter was introduced by deleting it.

(iii) Auxiliary request 1-A: since the upper limit for moiety III was the result of a calculation based on percentage figures originally disclosed, and since the resulting figure was within the range for moiety III specified in original Claim 1, this amendment did not offend against Article 123(2) EPC.

VII. During oral proceedings held on 2 March 2000, the main and auxiliary requests were amended as follows:

(i) The method claims 13 were deleted from all requests.

(ii) Auxiliary request 1-A was withdrawn.

VIII. In support of the allowability of the remaining claims and requests, the Appellant essentially reiterated the arguments as previously presented in writing.

IX. The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of Claims 1 to 12 of the main request received on 15 April 1996 or, alternatively, on the basis of Claims 1 to 12 of auxiliary requests 1 or 2 received on 29 December 1999.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 In Claim 1, which is a combination of Claims 1 and 2 as originally filed, the composition of the polyester is defined as follows:

"2 to 5 mol %	of moiety I,
58 to 62 mol %	of moiety II,
16.5 to 20 mol %	of moiety III,
1.5 to 11 mol %	of moiety IV and
11.5 to 22 mol %	of moiety V,

with the proviso that the molar concentration of moiety III is substantially the same as the total molar concentration of moieties IV and V."

The objection raised concerns the proviso, which is inconsistent with the definition of the concentrations of moieties III to V, since an upper limit of 20 mol % for moiety III is clearly incompatible with an upper limit of 22 mol % for moiety V.

2.2 As pointed out by the Board during oral proceedings, this inconsistency may be attributed to several erroneous figures and/or definitions. The most obvious ones are a too low upper limit of the molar range of moiety III and a too high upper limit of the molar range of moiety V, both being plausible. A further possibility, actually envisaged by the Appellant in its statement of 14 February 2000 (see point VI.ii), above), would be to regard the proviso as superfluous, since the latter has been included only to ensure the stoichiometric balance between the hydroxyl groups and the carboxylic groups in the starting compounds corresponding to moieties III to V, which is a prerequisite for a polycondensation reaction giving rise to a melt-processable polyester.

As demonstrated by the different requests submitted during these appeal proceedings, there are various conceivable amendments of the claim which could help to overcome the objection. Thus, depending on the figures and definitions which are regarded as erroneous, the wording of Claim 1 allows different interpretations, which fact creates uncertainty about the exact scope of the claimed subject-matter.

2.3 In view of these several potential causes of ambiguity about the scope of the claimed subject-matter, one can distinguish an area where all the requirements of Claim 1 can be met without any contradiction and several areas of uncertainty corresponding to the values of the parameters likely to be erroneous. The Appellant's argument that a skilled person could readily determine whether a given polyester contains the various moieties in the required concentrations (see point VI(i) above) and that only a polymer meeting all the quantitative and compositional requirements in Claim 1 would fall within the scope of Claim 1, is beside the point. First, this argument does not take the said areas of uncertainty into account which, depending on the error(s) considered, may be inside or outside that scope; secondly, the fact that it may be possible to prepare polyesters actually fulfilling all the conditions of Claim 1, as it appears from Example 1 of the application in suit, is of no assistance to interpret the claim.

2.4 Consequently, Claim 1 of the main request does not comply with the requirements of Article 84 EPC.

3. *Auxiliary request 1*

Claim 1 of auxiliary request 1 differs from Claim 1 of the main request by the deletion of the proviso. In other words, whilst in the original application the claimed subject-matter was defined by the term "melt-processable polyester" and by the compositional requirement represented by the proviso, the claimed subject-matter is now defined only by the single feature of the "melt-processable polyester".
As specified in the application in suit (page 11 as filed, lines 11 to 9 from below; page 6 as published, lines 20/21), the polyester envisaged may have a molecular weight as low as 2000. If one considers the

molecular weight of the individual moieties I to V, it is evident that such molecular weights correspond to rather low degrees of polycondensation, which themselves result from molar ratios III : (IV + V) rather far from the ideal value of 1. This means that the deletion of the proviso results in a broader definition of the melt-processable polyesters, which are no longer restricted to polymers obtained from substantially equimolar amounts of dicarboxylic acids (moiety III) and diphenols (moieties IV and V).
The present wording of Claim 1 is thus directed to subject-matter which extends beyond the content of the application as filed, which contravenes Article 123(2) EPC.

4. *Auxiliary request 2*

Claim 1 of auxiliary request 2 differs from Claim 1 of the main request by the introduction of the upper limits 8.5 and 18.5 in the ranges defining the molar amounts of moieties IV and V instead of 11 and 22, respectively.

Although these figures make it possible to combine the original proviso with a quantitative definition of the polymer, whereby the objection of inconsistency is overcome, these amendments are not acceptable because they have no basis in the application as originally filed. On the contrary, they are the result of calculation based on the assumption that the upper limits of the ranges defining the molar amounts of moieties IV and V, namely 11 and 22, respectively, were both erroneous.

This assumption, however, is not justified, since for the reasons given above in relation with the main request, there would be several ways to overcome the objection under Article 84 EPC and a skilled person

could not derive from the application as originally filed in an unambiguous way which correction had to be made (cf. Rule 88 EPC, last sentence: "... that it is immediately evident that nothing else would have been intended than what is offered as the correction"). Hence, Claim 1 of auxiliary request 2 violates Article 123(2) EPC.

5. Because a request can only be considered and decided upon as it stands, Claims 2 to 12 which are appendant to Claim 1 need not be taken into account separately.

6. Consequently, the Board has come to the conclusion that neither the main request nor auxiliary requests 1 or 2 meet the requirements of the EPC. Therefore, none of these requests can be successful.

7. It follows that reconsideration of the question of inventive step, on which the refusal of the application in the first instance was based, cannot reverse this conclusion and it follows that there is no need to consider the issues raised in that respect.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

E. Görgmaier

The Chairman:

C. Gérardin