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Aktenzeichen / Case Number / N° du recours : T 609/88 - 3.3.3

Anmeldenummer / Filing No / N° de la demande : 83 113 065.3

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Bezeichnung der Erfindung: **Aromatic amorphous thermoplastic polymers**

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : C08G 65/40

ENTSCHEIDUNG / DECISION

vom/of/du 10 July 1990

Anmelder / Applicant / Demandeur : Amoco Corporation

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 111(1); Rule 86(3)

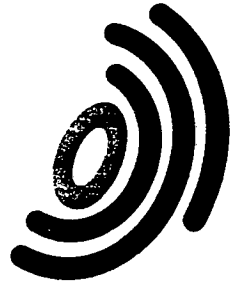
Schlagwort / Keyword / Mot clé : "Citation of a new document by the Appellant -
change of category of the claim - Remittal to
the first instance"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt
Beschwerdekammern

European Patent
Office
Boards of Appeal

Office européen
des brevets
Chambres de recours



Case Number : T 609/88 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 10 July 1990

Appellant : Amoco Corporation
200 East Randolph Drive
P.O. Box 5910-A
Chicago, Illinois 60680
USA

Representative : Weinhold, Peter, Dr.
Patentanwälte Dr. V. Schmied-Kowarzik
Dipl.-Ing. G. Dannenberg
Dr. P. Weinhold, Dr. D. Gudel,
Dipl.-Ing. S. Schubert, Dr. P. Barz
Siegfriedstrasse 8
D-8000 München 40

Decision under appeal : Decision of Examining Division 012
of the European Patent Office dated
18 April 1988 refusing European
patent application No. 83 113 065.3
pursuant to Article 97(1) EPC

Composition of the Board :

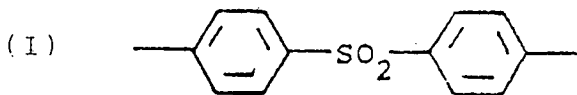
Chairman : F. Antony
Members : C. Gérardin
J. Stephens-Ofner

Summary of Facts and Submissions

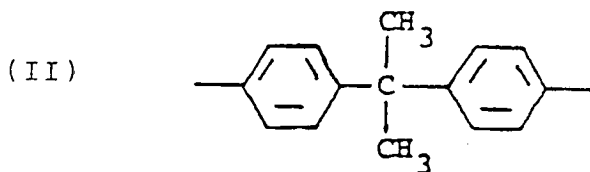
- I. European patent application No. 83 113 065.3, filed on 23 December 1983, claiming priority of 23 December 1982 from an earlier application in the United States of America and published on 11 July 1984 under the publication No. 113 112, was rejected by a decision of the Examining Division dated 18 April 1988, issued on 1 June 1988.

The rejection was based on a set of three claims resulting from amendment during oral proceedings held on 18 April 1988 of four claims filed on 4 June 1987, and of which Claim 1 reads as follows:

"Process for the production of an amorphous thermoplastic polymer containing units of the formula:



and



wherein the ratio of unit (I) to unit (II) is greater than 1; said units (I) and (II) being attached to each other by an -O- bond,
under substantially anhydrous conditions employing polar aprotic solvents in the presence of an alkali metal carbonate
characterized in that a monomer composition comprising Bisphenol A, Bisphenol S and chlorodiphenylsulfone is reacted."

II. The ground for this decision was that the subject-matter of the application in suit did not involve an inventive step with regard to the teaching of essentially the following documents:

- (1) US-A-4 174 175
- (5) EP-A-147 999.

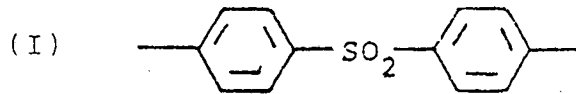
The decision stated that a polyether based on the same recurring units as the copolymer prepared according to the application in suit, but having a 1:1 ratio of diphenylsulfone units to units derived from Bisphenol A, was described in document (1). Higher ratios of diphenylsulfone units in similar polyethers were suggested in document (5), which disclosed the simultaneous use of two diphenylsulfone derivatives, one as dichloro compound, and the other as dihydroxy compound, together with hydroquinone as further dihydroxy compound. Vis-à-vis this teaching, the process claimed was regarded as a typical analogy process for which, in the absence of any surprising property of the resulting copolymers, no inventive step could be acknowledged.

III. A Notice of Appeal was lodged against this decision on 2 August 1988 with payment of the prescribed fee. The arguments presented by the Appellant in the Statement of Grounds of Appeal filed on 3 October 1988 and in a later submission filed on 2 March 1990 supported the patentability of a new process Claim 1, which differed in its wording, but scarcely in its substance, from Claim 1 as rejected by the Examining Division. These arguments were accompanied by comparative data showing that polyethersulfones containing the recurring units (I) and (II) in a ratio greater than 1 exhibited both higher environmental resistance and improved suitability for

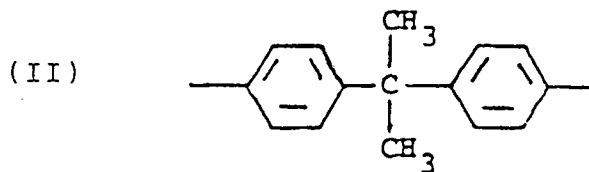
circuit board applications. These tests were alleged to be particularly relevant in view of US-A-3 647 751 (document (4)), which was considered in the examination procedure, but was not mentioned in the decision under appeal, and in which a polymer containing the recurring units (I) and (II) in the specific ratio of 2:1, but prepared by a different process, was exemplified.

IV. On 9 April 1990 the Appellant filed a new document "Poly(arylene ether sulfones) and related materials via a potassium carbonate, N-methyl pyrrolidone process" by D.K. Mohanty et al., published in American Chemical Society, Division of Polymer Chemistry, Vol. 23, No. 1, March 1982, which will be referred to as document (6) hereinafter. At the same time the following new single claim was submitted:

"The use of an amorphous thermoplastic polymer containing units of the formula:



and



wherein the ratio of unit (I) to unit (II) is greater than 1; said units (I) and (II) being attached to each other by an -O- bond;

obtained by the reaction of a monomer composition comprising Bis-phenol A, Bisphenol S and 4,4'-dichlorodiphenylsulfone in the presence of an alkali metal carbonate in a polar aprotic solvent, maintaining the

reaction medium at substantially anhydrous conditions during the polymerisation for the production of molded articles."

In this wording the position of the chlorine atoms in the dichloro compound has been changed from 4,4 into 4,4' in order to correct an obvious clerical error.

- V. The Appellant requests that the impugned decision be set aside and that a patent be granted on the basis of the single claim filed on 9 April 1990.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. The admission at a late stage of a new set of claims substantially different from the old ones is discretionary (Rule 86(3) EPC, second sentence) and the Board would normally refer the question of admissibility to the first instance. In the present case, where the submission of the new claim has been the result of the Appellant's own voluntary citation of a new document (document (6)), the appropriateness of submitting the new claim is sufficiently clear to enable the Board, by way of exception, to decide upon admissibility under its discretionary power (Article 111(1) EPC) and to admit the claim.
3. The wording of the claim now under consideration does not give rise to objections under Article 123(2) EPC.

The use of polymers containing the recurring units (I) and (II) for the production of moulded articles corresponds to

the application of the polymer prepared in Example 1 (page 13, lines 1 to 6 and page 14, Table I of the original documents). The two recurring units and their ratio are disclosed in original Claims 1 and 5; the three starting compounds correspond to the first three of the preferred monomers referred to on original page 6, lines 20 to 22; these structural requirements are combined with various operative features concerning the presence of an alkali metal carbonate (page 9, lines 10 to 15), the use of polar aprotic solvents (page 8, line 1 to page 9, line 6) and the substantially anhydrous conditions (page 9, line 16 to page 10, line 7).

4. Once an admissible appeal has been filed, the Board of Appeal has the responsibility for deciding the appeal in place of the department which was responsible for the decision under appeal. It may thus either exercise any power within the competence of the Examining Division or remit the case to the Examining Division for further prosecution (Article 111(1) EPC). However, as laid down in the decision T 63/86 of 10 August 1987 published in OJ EPO 1988, 224, the limit to which this power applies is determined by the extent to which the claims have been amended (point 2, third paragraph). In case of major amendments which raise new issues and require a substantial further examination, such further examination should, as a general rule, be carried out by the first instance.

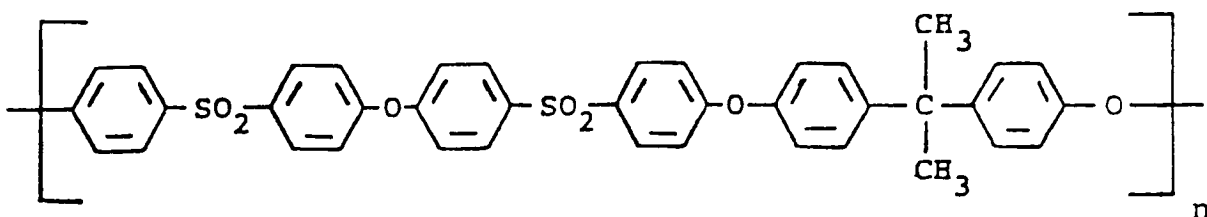
In the present case, the claim on file differs significantly from Claim 1 of the set of claims rejected by the Examining Division. Whilst the new claim is directed to the use of a specific polymer for the production of moulded articles, the old one was concerned with the preparation of such polymer. Although, for the

reasons stated in point 2 above, the Board has exercised its own discretion under Rule 86(3) EPC and ruled that the new claim was prima facie admissible, such a substantial degree of amendment of the scope of protection in itself justifies the remittal of the case to the Examining Division for carrying out a fresh examination.

5. Moreover, as follows from points III and IV above, the documents which seem to be the most relevant are documents (4) and (6) which were not taken into consideration by the decision under appeal.

5.1 As noted by the Appellant in the Statement of Grounds of Appeal (page 4, line 19 to page 5, line 1), a process for preparing a copolymer based on the recurring units (I) and (II) is known from document (4).

According to Example 1, Bisphenol A is first reacted with sodium hydroxide to produce the bisphenolate which is then polycondensed with an equimolar amount of 4,4'-bis-(4-chlorophenylsulfone)-diphenylether to produce a polyarylethersulfone of formula:



Emphasis is put on the good mechanical properties and dimensional stability of this polymer over a wide temperature range which allows the use thereof in the manufacture of shaped articles by injection moulding,

extrusion and compression moulding processes, as well as in the electrical industry (column 1, lines 47 to 59). With regard to this teaching, the subject-matter of the present claim only differs in the method chosen to prepare the aromatic polyethersulfone.

- 5.2 Document (6) is a survey of the preparation of various polyethersulfones by reacting 4,4'-dichlorodiphenylsulfone with one or more bisphenols using the so-called potassium carbonate/N-methylpyrrolidone route. Polycondensation is achieved in presence of toluene which acts as an azeotrope forming solvent ensuring anhydrous conditions and thereby high molecular weights (page 284, section "Experimental"). According to Table II, page 285 (second Example), a copolymer is prepared from a mixture of 2,2-bis(4-hydroxyphenyl)propane and 4,4'-dihydroxydiphenylsulfone, i.e. respectively Bisphenol A and Bisphenol S, used in equimolar amount, thus giving rise to a copolymer based on the recurrent units (I) and (II) in the ratio 75:25.

Although moulding operations are not explicitly envisaged in this article, the combination of properties mentioned there in general terms, i.e. hydrolytic, thermal and dimensional stability, over a wide use temperature range as well as good mechanical properties (page 284, section "Introduction", paragraph 1), can only be interpreted by the skilled man as a list of requirements to be fulfilled by a polymer suitable for such moulding operations, as evident from point 5.1 above.

- 5.3 Thus, in the Board's view, documents (4) and (6) appear sufficiently relevant to require substantive examination on a new basis.
6. For both reasons, i.e. in view of the drastic amendment of the claimed subject-matter and of the fact that the highly

relevant documents were not considered in the decision under appeal, the Board deems it appropriate to make use of its power under Article 111(1) EPC and to remit the case to the first instance, so as not to deprive the Appellant of his right to two levels of jurisdiction.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division for further prosecution on the basis of the claim filed on 9 April 1990.

The Registrar:



M. Beer

The Chairman:



F. Antony