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D E C I S I O N
of 14 May 2004

Case Number: T 1226/03 - 3.3.3

Application Number: 98307471.7

Publication Number: 0902053

IPC: C08L 67/02

Language of the proceedings: EN

Title of invention:

Reinforced aliphatic polyester molding composition

Applicant:

GENERAL ELECTRIC COMPANY

Opponent:

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Headword:

-

Relevant legal provisions:

EPC Art. 84

Keyword:

"Claims - functional features"
"Claims - clarity (no)"

Decisions cited:

-

Catchword:

-



Case Number: T 1226/03 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 14 May 2004

Appellant:

GENERAL ELECTRIC COMPANY
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Representative:

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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office issued in writing on
14 July 2003 refusing European application
No. 98307471.7 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: R. Young
Members: W. Sieber
E. Dufrasne

Summary of Facts and Submissions

I. European patent application No. 98 307 471.7 in the name of GENERAL ELECTRIC COMPANY, filed on 15 September 1998, claiming a US priority of 15 September 1997 (US 929649) and published under No. 0 902 053 on 17 March 1999, was refused by a decision of the examining division issued in writing on 14 July 2003.

II. The decision was based on a set of Claims 1 to 10 where Claim 1 read as follows:

"A reinforced, molding composition having improved ductility and melt flow properties comprising a uniform mixture of:

- (a) a cycloaliphatic polyester resin comprising the reaction product of an aliphatic C₂-C₁₂ diol or chemical equivalent and a C₆-C₁₂ aliphatic diacid or chemical equivalent, said cycloaliphatic polyester resin containing at least about 80% by weight of a cycloaliphatic dicarboxylic acid, or chemical equivalent, and/or of a cycloaliphatic diol or chemical equivalent;
- (b) 5% to about 25% by weight of an impact modifying amorphous resin which increases the ductility of the polyester resin (a) but reduces the melt flow properties thereof;
- (c) 2% to about 50% by weight of a high molecular weight polyetherester polymer which increases the melt flow properties of the impact-modified polyester polymer (a & b) without reducing the ductility thereof, and

(d) 5% to about 50% by weight of a glass fiber filler to reinforce and stiffen the composition and form a reinforced molding composition."

Claims 2 to 10 were dependent claims directed to elaborations of the subject-matter of Claim 1.

III. According to the decision, the application was refused since the subject-matter of Claims 1 to 10 was not inventive over the disclosure of document D1:

D1: WO-A-93/04124.

IV. On 8 September 2003, a notice of appeal against the above decision was filed by the applicant (hereinafter referred to as the appellant) with simultaneous payment of the prescribed fee.

In the statement of grounds of appeal, filed on 19 November 2003, the appellant argued that D1 was not the closest prior art for the consideration of inventive step since there was no specific disclosure in D1 of compositions containing 5 to 50% by weight of a glass fibre filler or 5 to 25 weight% of an impact modifier, let alone of the effect related to these components. Furthermore, the presence of the polyetherester in the compositions according to the present invention resulted in a substantial increase in the heat deflection temperature which was completely unexpected and was considered to provide evidence for the presence of inventive step.

V. In a communication issued on 24 March 2004 accompanying a summons to oral proceedings, one of the salient

issues as to the merits of the appeal was identified by the board as being the clarity of Claim 1 with regard to the functional definition of components (b) and (c) and the clarity of Claim 10 with regard to the optional presence of a polycarbonate polymer. The issue relating to Article 84 EPC was introduced into the proceedings based on G 10/93 (OJ EPO 1995, 172).

VI. In response to the summons to oral proceedings, the appellant filed on 30 April 2004 replacement sets of claims, namely a main request and auxiliary requests 1 to 3.

- (a) The claims of the main request, ie Claims 1 to 9, corresponded to the claims on which the decision under appeal was based apart from the deletion of the word "about" in Claim 1 (four occurrences) and the deletion of dependent Claim 10.
- (b) Auxiliary request 1 corresponded to the main request except that the word "comprising" in component (a) of Claim 1 was replaced with "consisting of" and the word "comprises" in Claim 2 was replaced with "consists of".
- (c) Auxiliary request 2 corresponded to auxiliary request 1 except that Claim 1 further indicated the amount of component (a), ie "20 to 80% by weight".
- (d) Claim 1 of auxiliary request 3 further included the subject-matter of Claim 2 of auxiliary request 2 so that component (a) was now defined as follows:

"20 to 80% by weight of a cycloaliphatic polyester resin consisting of the reaction product of an C₆-C₁₂ cycloaliphatic diol or chemical equivalent and a C₆-C₁₂ aliphatic diacid or chemical equivalent".

Claims 2 to 8 corresponded to Claims 3 to 9 of the main request.

As regards the definition of components (b) and (c) in Claim 1 of each of the requests, the appellant pointed out that these definitions were in relation to compositions containing glass fibre filler (d). This was apparent from page 1, lines 18 to 24 of the application as originally filed, and in particular from Comparative Examples C1, C2 and Example E1.

In the same letter, the appellant informed the board that it did not intend to attend the oral proceedings and withdrew its previous request for oral proceedings.

VII. On 14 May 2004, oral proceedings were held before the board, at which the appellant, as announced, was not represented. In accordance with Rule 71(2) EPC, the oral proceedings were continued in the absence of the appellant based on the requests on file.

VIII. The appellant requested that the decision under appeal be set aside and that a decision be issued on the claims submitted as main request and auxiliary requests 1 to 3, all requests filed on 30 April 2004. Furthermore, it was requested that should any of the

sets of claims be allowable the case be remitted to the examining division for amendment of the description.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 EPC and Rule 64 EPC and is therefore admissible.

2. *Main request*

2.1 Amendments

Claims 1 to 9 of the main request substantially correspond to the claims on which the contested decision was based, the only differences being that the word "about" in Claim 1 (four occurrences) and Claim 10 were deleted. There are no objections to these claims under Article 123(2) EPC.

2.2 Clarity (main request)

2.2.1 The reinforced moulding composition as claimed in Claim 1 comprises a uniform mixture of four components, namely a cycloaliphatic polyester resin (a), an impact modifying amorphous resin (b), a high molecular weight polyetherester resin (c) and a glass fibre filler (d), whereby components (b) and (c) are defined in functional terms. Thus, compound (b) is defined as an impact modifying amorphous resin which increases the ductility of the polyester resin (a) but reduces the melt flow properties thereof. Similarly, compound (c) is defined as a high molecular weight polyetherester resin which increases the melt flow properties of the

impact-modified polyester polymer (a & b) without reducing the ductility thereof. Hence, in order to know whether or not a specific resin (b) is a compound falling within the functional definition of Claim 1, the properties of the polyester resin (a) have to be compared with the properties of a composition containing the polyester resin (a) and that resin (b). As regards a specific resin (c), the properties of the impact modified polyester polymer (a & b) have to be compared with the properties of a composition containing (a), (b) and (c).

2.2.2 Although the functional definition of component (b) and (c) explicitly refers to the polyester resin (a) and the modified polyester polymer (a & b), respectively, as the basis for comparison, the appellant argued that the wording in relation to component (b) in Claim 1 was in relation to a composition containing (a) and (d) and similarly in relation to component (c) being with regard to a composition containing (a), (b) and (d). In other words, the comparison had to be made against a filler-containing polyester resin (a) and a filler-containing impact modified polyester resin (a & b), respectively.

Whilst it is true that the application as originally filed acknowledges on page 1, lines 18 to 24 that the addition of an impact modifier to a reinforced polyester resin composition is accompanied by an increase in the melt viscosity or reduction in the melt flow and Comparative Examples C1, C2 and Example E1 illustrate the effect of component (b) and component (c), respectively, on filler-containing compositions, it is conspicuous to the board that

Claim 1 does not refer to a filler-containing polyester resin (a) or a filler-containing impact modified polyester resin (a & b) as the basis for comparison.

Thus, an ambiguity arises as to whether the functional definitions of components (b) and (c) in Claim 1 have to be interpreted literally, ie requiring a comparison of the properties of compositions containing no filler, or, as argued by the appellant, in the context of the application in suit, ie requiring the comparison of the properties of compositions also containing filler (d).

- 2.2.3 The lack of clarity of Claim 1 is compounded by the fact that there is no indication of the quantitative constitution of the compositions that have to be compared. Thus, the amount of component (b) and (c), respectively, that has to be added when evaluating the functional definition for these components is not indicated. Furthermore, when compound (c) is added to components (a) and (b), the proportional composition with regard to (a) and (b) changes. However, the application in suit provides no instructions whether compound (c) replaces part of (a), part of (b) or parts of both. Thus, the quantitative composition of the compositions which have to be compared is unclear.

The same ambiguity arises for the appellant's interpretation of Claim 1, ie compositions including filler (d). Although Comparative Examples C1, C2 and Example 1 illustrate the effect of component (b) and component (c), respectively, on filler-containing compositions (see also point 2.2.2, above), it is not evident from the application in suit that the specific conditions of these examples generally apply for the

evaluation of the functional definition of components (b) and (c).

2.2.4 It is evident from the above, that the functional definition of components (b) and (c) is deficient both in qualitative and in quantitative aspects and, therefore, compromises the clarity of Claim 1 contrary to the requirements of Article 84 EPC.

2.3 With Claim 1 being not clear, the appellant's main request is refused.

3. *Auxiliary requests 1 to 3*

Since Claim 1 of each auxiliary request contains the same functional definition of components (b) and (c) as the main request, each of these auxiliary requests has to be refused in view of Article 84 EPC for the reasons given in point 2.2, above.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

E. Görgmaier

R. Young