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D E C I S I O N
of 13 August 2003

Case Number: T 0685/00 - 3.3.7

Application Number: 92304839.1

Publication Number: 0516412

IPC: D06M 15/53

Language of the proceedings: EN

Title of invention:
Cardable hydrophobic polypropylene fiber

Applicant:
FiberVisions, L.P.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
"Amendments - added subject-matter (yes)"

Decisions cited:
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Catchword:
-

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Case Number: T 0685/00 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 13 August 2003

Appellant: FiberVisions, L.P.
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Representative: Howard, Paul Nicholas
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Decision under appeal: Decision of the Examining Division of the European Patent Office posted 20 December 1999 refusing European application No. 92304839.1 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: R. E. Teschemacher
Members: G. Santavicca
P. A. Gryczka

Summary of Facts and Submissions

I. European patent application 92 304 839.1 was filed on 28 May 1992, claiming a priority in the USA of 28 May 1991 (US 706450), and published on 2 December 1992 under the No. 0 516 412.

The application as originally filed comprised 12 claims, independent Claims 1 and 12 reading as follows:

"1. A method for treating the surface of hydrophobic polyolefin-containing fibers to improve their lubricity and antistatic properties comprises applying a liquid lubricating finish to the surface of an extruded polyolefin-containing fiber or filament, characterized in that the finish is selected from the group consisting of

(1) a polyol having the formula

$(R)_m\text{-}C\text{-}(CH_2OH)_{4-m}$ or

$$\begin{array}{l} CH_2\text{-}OH \\ | \\ (CH\text{-}OH)_n \\ | \\ CH_2\text{-}OH \end{array}$$

in which R is an alkyl group having 1 to 4 carbon atoms; m is 0 to 3 and n is 0 to 4;

(2) a water-soluble ester or polyester obtained by reacting a polyol having one of the said formulas with

a fatty acid having up to 6 carbon atoms in a linear or branched chain;

(3) a glycol obtained by reacting a polyol having the said formula with ethylene oxide;

and then mechanically processing the fiber or filament, the finish providing lubricity for the processing operations and lacking sufficient lipophilic substituents to produce significant surfactant properties."

"12. Use of a liquid lubricating finish as defined in any of the preceding claims to treat the surface of a hydrophobic extruded polyolefin-containing fiber or filament prior to mechanically processing the fiber or filament to provide lubricity for the processing operations in the absence of a significant decrease in hydrophobicity."

II. In a decision of the Examining Division, posted on 20 December 1999, the application was refused. That decision was based on amended Claims 1 to 16 filed during the oral proceedings held on 25 June 1999 as the sole request. Claim 1, the only independent claim, read as follows:

"1. A method for treating the surface of hydrophobic polyolefin-containing fibers or filaments to produce hydrophobic fibers or filaments having a finish of improved lubricity and antistatic properties, which method comprises

(A) applying a liquid lubricating finish as a spin finish to the surface of an extruded polyolefin-containing fiber or filament, which finish comprises a water-soluble compound within the class defined by the formula:

$$R_2\text{-}(OCH_2CH_2)_o\text{-}OR_3 \qquad (1)$$

in which R_2 is hydrogen or a straight or branched acyl group having up to 6 carbon atoms; R_3 is hydrogen or a straight or branched acyl group having up to 6 carbon atoms; and o is 2-50;

(B) mechanically processing the fiber or filament, the finish providing lubricity for the processing operations; and

(C) applying an overfinish to the fibers or filaments such that the resulting fibers or filaments are hydrophobic."

III. Having regard to the requirements of Articles 84, 123(2), 54 and 56 EPC, the Examining Division held that:

(1) the new claims no longer contained obscurities, inconsistencies and added subject-matter;

(2) the claimed subject-matter was novel, but lacked an inventive step.

Therefore, the application had to be refused.

IV. The applicants lodged an appeal against that decision, received on 25 February 2000, and paid the prescribed fee on the same day. In their statement of grounds of

appeal, received on 28 April 2000, the appellants enclosed four sets of amended claims, as the main request and first to third auxiliary requests, respectively, together with amended pages of the description, as well as a report of a comparative test.

V. In a reply to the communication in preparation for oral proceedings, in which the Board detailed the points to be dealt with, *inter alia* in relation to the amendments, the applicants withdrew auxiliary requests 1 to 3 as filed with the statement of grounds of appeal and enclosed an amended main request and new auxiliary requests 1 to 3 as well as a description adapted to each request, in which the examples as filed had been cancelled (letter dated 1 August 2003).

Claim 1 of the amended main request read as follows:

"1. A method for treating the surface of hydrophobic polyolefin-containing fibers or filaments to improve their lubricity and antistatic properties, which method comprises

(A) applying a liquid lubricating finish as an initial spin finish to the surface of an extruded polyolefin-containing fiber or filament, which finish comprises a water-soluble compound within the class defined by the formula:

$$R_2-(OCH_2CH_2)_o-OR_3 \quad (1)$$

in which R_2 is hydrogen or a straight or branched acyl group having up to 6 carbon atoms; R_3 is hydrogen or a

straight or branched acyl group having up to 6 carbon atoms; and o is 2-50;

(B) mechanically processing the fibers or filaments, the finish applied in step (A) providing lubricity for the processing operations; and

(C) applying an antistatic agent as an overfinish to the fibers or filaments after step (A) such that the resulting fibers or filaments remain hydrophobic."

Claims 2 to 16 concern particular embodiments of the method of Claim 1.

VI. Oral proceedings were held on 13 August 2003. During the discussion, the appellants explained the basis in the application as filed which justified the amendments in the claims.

The Board elucidated its objections, doubts and questions, in particular regarding the amendments in steps (A) and (C) of Claim 1, which amendments were present in all of the requests on file.

VII. The arguments of the appellants in support of the claimed subject-matter, as far as they are relevant to the present decision, can be summarised as follows:

The amendments were all supported by the description and did not introduce any subject-matter contrary to Article 123(2) EPC, in particular Claim 1 was fully supported by the description as filed for the following reasons:

(1) the specification as filed disclosed the optional presence of an overfinish treatment on page 2, line 36, as well as the application of an antistatic agent in Claim 10 as filed;

(2) the preservation of the hydrophobicity was disclosed throughout the application as filed;

(3) the skilled person reading the specification would thus have understood that any antistatic agent could be used as an overfinish provided that the hydrophobicity of the fibres was retained, as required by step (C) of Claim 1 in suit;

(4) given the implicit disclosure for the skilled person resulting from the application as filed, there was no need to specify in step (C) of Claim 1 which antistatic agent could be used.

VIII. The appellants requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request, alternatively on the basis of any of the three auxiliary requests filed by letter dated 1 August 2003.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 Amendments

2.1.1 Compared with Claim 1 as filed, present Claim 1 *inter alia* contains the following modification:

"applying an antistatic agent as an overfinish to the fibers or filaments after step (A) such that the resulting fibers or filaments remain hydrophobic" (step (C) of Claim 1);

2.1.2 Concerning the modification, the appellants pointed in particular to the following parts of the application as filed, which disclose that:

(1) after the finish treatment, the processing step may involve an optional overfinishing (page 2, lines 35 and 36);

(2) a preferred overfinishing step may comprise applying about 0.05%-.80% of an overfinish composition at or downstream from the fibre crimping station, the overfinish comprising:

(A) about 0%-65%, by composition weight, of at least one polysiloxane represented by the formula

$$\begin{array}{c} R^{IV} \\ | \\ X\text{-}(Si\text{-}O)\text{-}Y \\ | \\ R^{IV} \end{array}$$

in which X and Y are individually defined as a hydrophobic chemical end group such as a lower alkyl group;
each R^{IV} is individually defined as a lower alkyl such as a methyl or octyl group; and r is a positive number within the range of at least about 10 and preferably up to about 50; and

(B) about 35%-100%, by weight of overfinish composition, of at least one neutralized phosphoric acid ester, as an antistatic agent, having the formula:

$$\begin{array}{c} O \\ \| \\ (Alk\text{-}O\text{-})_s\text{-}P\text{-}O\text{-}R^{V}_t \end{array}$$

in which each Alk is individually defined as a lower alkyl group, inclusive of a 1-8 carbon alkyl, preferably a 4 to 8 carbon alkyl such as butyl or octyl; R^V is an amino group or an alkali metal; and s and t are individually positive numbers of not less than about 1, the sum of which is about 3 (paragraph bridging pages 4 and 5);

(3) that class of neutralized phosphoric acid esters can be applied to the fibres as an antistatic agent (Claim 10 as filed);

(4) antistatic properties and lubricity should be imparted to polyolefin-containing hydrophobic fibres or filaments to facilitate processing with less interference with their hydrophobicity (page 2, lines 3 to 7);

(5) the finish should provide lubricity for the processing operations in the absence of a significant decrease in hydrophobicity (Claim 12 as filed).

2.1.3 However, from these parts of the description as filed, indicated by the appellants, no support can be found for the use of any antistatic agent as an overfinish, in particular:

(1) nothing is said whether or not, after the finish treatment, the optional overfinishing involves the use of antistatic agents other than those mentioned in the description, let alone that every other type of antistatic agent should be such that the fibres remain hydrophobic;

(2) Claim 10 as filed mentions a specific class of compounds and does not require that the fibres remain hydrophobic;

(3) as regards the preservation of the hydrophobicity of the fibres after the overfinishing, from the description as filed the skilled person

understands that the decrease in hydrophobicity that necessarily results from the application of a water soluble finish should not be significant. Its exact meaning, let alone how to measure it, is, however, not given.

2.1.4 It results from the above that the application as filed only discloses the use of a specific class of antistatic agents, namely the neutralized phosphoric acid esters defined in the paragraph bridging original pages 4 and 5 as well as in Claim 10 as filed. No support can be found for the use of other types of antistatic agents, let alone as an overfinish.

2.1.5 The use of any antistatic agents as an overfinish does not directly and unambiguously result from the application as filed, nor is it implicit to the skilled person. Moreover, the preservation of the hydrophobicity of the treated fibres, despite the application of any antistatic agent as an overfinish, can also not be derived from the specification as filed.

2.1.6 Therefore, by the inclusion of step (C), Claim 1 has been amended in such a way that it contains subject-matter (the application of any antistatic agent other than the originally disclosed class of phosphoric acid esters as an overfinish for the desired purpose of the method) which extends beyond the content of the application as filed (Article 123(2) EPC).

2.1.7 In view of the above, it is not necessary to decide whether the other modifications, addressed in the Board's communication and discussed in the oral proceedings fulfil the requirements of the EPC.

2.1.8 Consequently, the main request is not admissible.

3. *First to third auxiliary requests*

3.1 Each of the first to third auxiliary requests has a Claim 1 which contains the features of step (C) of Claim 1 according to the main request, albeit more restricted, eg by the amounts of antistatic agent applied.

3.2 Therefore, the above conclusion for Claim 1 according to the main request (point 2.1.6 *supra*) applies *mutatis mutandis* to each of the auxiliary requests, such that none of them is admissible (Article 123(2) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

R. Schumacher R. Teschemacher