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

Case Number: T 0044/03 - 3.2.7

Application Number: 97917882.9

Publication Number: 0896549

IPC: B05D 1/24

Language of the proceedings: EN

Title of invention:
Process for coating a substrate

Applicant:
E.I. DU PONT DE NEMOURS AND COMPANY

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 111(1)

Keyword:
"Novelty - (yes, after amendment)"
"Remittal to the first instance"

Decisions cited:
-

Catchword:
-

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Case Number: T 0044/03 - 3.2.7

D E C I S I O N
of the Technical Board of Appeal 3.2.7
of 13 August 2003

Appellant: E.I. DU PONT DE NEMOURS AND COMPANY
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 23 August 2002 refusing European application No. 97917882.9 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: A. Burkhart
Members: H. E. Hahn
C. Holtz

Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal against the decision of the Examining Division to refuse the European patent application No. 97 917 882.9.

II. The Examining Division held that the subject-matter of the independent method claim 1 lacked novelty with respect to the disclosure of document

D1: FR-A-1 473 395

III. In a communication the Board held that the subject-matter of claim 1 due to the uncommon expression "tack temperature gradient" did not meet the requirements of Article 84 EPC taken in combination with Rules 29(1) and (3) EPC that any independent claim must contain all the technical features essential to the invention. The Board further stated that, provided that the missing definitions were to be incorporated into claim 1, it would acknowledge the novelty of claim 1 over the disclosure of document D1.

IV. With letter of 25 July 2003 the appellant requested that the decision under appeal be set aside and that the case be remitted to the first instance with the order to proceed further with the substantive examination of the further requirements according to the EPC on the basis of claims 1 to 10 and the description pages 2 and 2a filed on 25 July 2003 with the aforementioned letter and the description pages 1 and 1a as filed on 31 October 2002 and the pages 3 to 17 as originally filed.

V. The independent claim 1 under consideration reads as follows:

"1. A Process for coating a substrate with a thermoplastic and/or thermosetting polymer comprising the steps of heating said substrate, immersing said heated substrate into a fluidized bed of particles of said polymer to coat the substrate with said polymer, and removing the coated substrate from the fluidized bed, characterized in that

i) during said heating step, said substrate is heated to a temperature within the tack temperature gradient of said polymer, which temperature is sufficient to tackify said polymer particles so that said polymer particles adhere to said heated substrate;

ii) the temperature in the fluidized bed is maintained below that at which said polymer particles tackify;

iii) during said immersing step, all surfaces of said heated substrate are covered substantially uniformly with said polymer particles; and

iv) said substrate substantially uniformly covered with said polymer particles is subsequently heated to above the tack temperature gradient to produce a level polymer coating of up to 300 micrometers and, optionally, to cure said polymer if it is thermosetting;

provided that, to obtain a level polymer coating of up to 150 micrometers, the particle size of said polymer particles in said fluidized bed is such that at least 80 weight percent are between 10 to 80 micrometers, wherein

said tack temperature gradient comprises a temperature range whose lower limit is the tack temperature and whose upper limit is about 75°C higher, provided it

remains below the melt temperature and, wherein the melt temperature of the polymer is taken as the end of melting, where the melting endothermic peak rejoins the baseline, when measured by ASTM D3417-83."

VI. The appellant argued essentially as follows:

The feature "tack temperature gradient" of item (i) implies a temperature of the substrates below the melt temperature of the polymer whereas according to the cited document D1 the substrates are heated to a temperature of about 245°C, i.e. above the melting point of the polymer. Furthermore, the coated substrate according to document D1 is then reheated to a temperature in the same range as the preheating temperature to "ensure that the surface particles are joined by fusion, and allows the product to flow in forming a uniform coating" (cf. D1, page 2, left column, fourth paragraph) which implies a temperature above the melt temperature as a prerequisite. The present invention differs in that two different temperatures are employed, namely a preheat temperature to tackify the polymer particles so that they adhere to the substrate (item (i) of claim 1) and a second temperature to form the polymer film (item (iv) of claim 1). The Appellant thus concludes that claim 1 is novel with respect to D1.

Reasons for the Decision

Original disclosure - Article 123(2) EPC

1. The independent process claim 1 of the sole request is based on the subject-matter of the originally filed claim 1. The additional features "heated **to above the tack temperature gradient**" and "**said tack temperature gradient comprises a temperature range whose lower limit is the tack temperature and whose upper limit is about 75°C higher, provided it remains below the melt temperature and, wherein the melt temperature of the polymer is taken as the end of melting, where the melting endothermic peak rejoins the baseline, when measured by ASTM D3417-83**" of claim 1 can be found at page 6, lines 19 to 21, and page 2, line 35 to page 3, line 1 and lines 23 to 27, and page 4, lines 20 to 22 and lines 25 to 27 of the originally filed specification.

The dependent claims 2 to 10 are based on or can be derived from the originally filed claims 3 to 4, 7 and 9; and page 3, lines 7 to 9 and lines 34 to 36; page 4, lines 25 to 27; page 5, lines 19 to 22; page 7, lines 7 to 9; and page 8, lines 16 to 17.

Hence the requirements of Article 123(2) EPC are met for the claims 1 to 10.

Novelty

2. Document D1 discloses a process for coating substrates with specific thermoplastic materials, namely oxymethylene polymers, by coating the substrates in a

fluidized bed. The substrates are heated to a temperature above the melt temperature of the polymer particles which should also have a specific particle size, most preferably in the range of 177 to 74 micrometers (cf. page 1, right hand column, second and third paragraph; page 2, left hand column, third and fourth paragraph). The clarified feature "tack temperature gradient" of item (i) of claim 1 implies a temperature of the substrates below the melt temperature of the polymer whereas according to the cited document D1 the substrates are heated to a temperature of about 245°C, i.e. above the melting point of the polymer (cf. D1, examples). Furthermore, the coated substrate according to document D1 is then reheated to a temperature in the same range as the preheating temperature to "ensure that the surface particles are joined by fusion, and allows the product to flow in forming a uniform coating" (cf. D1, page 2, left column, fourth paragraph) which implies a temperature above the melt temperature as a prerequisite.

The present invention differs therefore in that two different temperatures are employed:

(a) a first preheat temperature to tackify the polymer particles so that they adhere to the substrate (item (i) of claim 1 in combination with the definition of the "tack temperature gradient"); and

(b) a second temperature to form the polymer film (item (iv) of claim 1).

2.1 The Board thus concurs with the appellant that the process of claim 1 is novel with respect to the disclosure of document D1.

2.2 The same applies to the subject-matter of the dependent claims 2 to 10 which define further preferred embodiments of the process according to claim 1.

Remittal to the first instance

3. The appellant requested that the case be remitted to the first instance for further prosecution. The Examining Division evidently only examined the application on regards novelty. Under these circumstances the Board considers it appropriate to exercise its discretion under Article 111(1) EPC to remit the case to the Examining Division for further prosecution.

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 for further prosecution.

The Registrar: The Chairman:

D. Spigarelli A. Burkhart