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Datasheet for the decision of 6 May 2008

Case Number: T 1375/06 - 3.2.05

Application Number: 00300413.2

Publication Number: 1022115

IPC: B29C 70/64

Language of the proceedings: EN

Title of invention:
Polymeric articles having a textured surface and frosted appearance

Patentee:
ARKEMA FRANCE

Opponents:
Lucite International UK Limited
Evonik Röhm GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 83

Keyword:
"Sufficiency of disclosure (main and auxiliary requests, no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1375/06 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 6 May 2008

Appellant I: (Patent Proprietor)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted 12 July 2006 concerning maintenance of European patent No. 1022115 in amended form.**

Composition of the Board:

Chairman: W. Zellhuber
Members: P. Michel
E. Lachacinski

Summary of Facts and Submissions

I. Appellant I (patentee) and appellants II and III (opponents 01 and 02) lodged appeals against the interlocutory decision of the Opposition Division maintaining European patent No. 1 022 115 in amended form.

II. The Opposition Division did not admit a main request and was of the opinion that the subject-matter of claim 1 of auxiliary requests 1 to 6 did not involve an inventive step. The patent in suit was maintained in accordance with auxiliary request 7 of appellant I.

III. Oral Proceedings were held before the Board of Appeal on 6 May 2008.

IV. Appellant I requested that the decision under appeal be set aside and the patent in suit be maintained on the basis of the following documents:

(i) Main request: claims 1 to 14 filed as "Requête principale" on 31 August 2007; or

(ii) Auxiliary request: claims 1 to 5 filed as "Requête subsidiaire 1" during the oral proceedings.

Appellants II and III requested that the decision under appeal be set aside and that the European Patent No. 1 022 115 be revoked.

V. Claims 1, 7 and 11 of the main request read as follows:

"1. An extruded polymeric article comprising a polymeric matrix and polymeric particles which are substantially spherical, highly crosslinked, have a mean particle size of 25-55 micrometers and have a particle size distribution between 10-110 micrometers, wherein the article has a frosted and surface textured finish,
wherein the frosted appearance is achieved through the mismatch of the refractive indices of the polymeric particles and polymeric matrix by greater than 0.02, and
wherein the polymer used as the polymeric matrix is an acrylic polymer and the polymeric particles comprise 10-50% styrene, 90-50% methyl methacrylate and 0.1-2.5% crosslinking agent."

"7. An extrudable resin comprising
a) 20-90% polymethyl methacrylate based matrix;
b) 5-50% modifiers; and
c) 5-30% highly crosslinked spherical beads comprising
10-50% styrene;
90-50% methyl methacrylate; and
0.1-2.5% crosslinking agent,
wherein the beads have a mean particle size of 25-55 micrometers, and a particle size distribution of between 10-110 micrometers,
wherein there is a mismatch of refractive indices of the highly crosslinked spherical beads and polymethyl methacrylate based matrix by greater than 0.02."

"11. An extrudable resin comprising
a) 70-85% polymethyl methacrylate based matrix; and
b) 15-30% highly crosslinked spherical beads comprising
15-35% styrene;
65-85% methyl methacrylate; and
0.5-1.5% allyl methacrylate,
wherein the beads have a mean particle size of 25-55 micrometers, and a particle size distribution of between 10-110 micrometers, wherein there is a mismatch of refractive indices of the highly crosslinked spherical beads and polymethyl methacrylate based matrix by greater than 0.02."

Claims 1 and 5 of the auxiliary request differ from claims 7 and 11 respectively of the main request in that the term "weight" is introduced before "mean particle size".

VI. The following documents are referred to in the present decision:

D53: Reworking of Example 2A of the patent in suit
D53a: Affidavit of Dr. Schwarz-Barac, concerning reworking of Example 2A
D53b: Affidavit of Mr. Schnabel, concerning reworking of Example 2A
D54: Particle size distribution of sample 16405/50
D55: Reworking of Example 2B of the patent in suit
D55a: Affidavit of Dr. Schwarz-Barac, concerning reworking of Example 2B
D55b: Affidavit of Mr. Schnabel, concerning reworking of Example 2B
D56: Report No. A060026403

VII. The arguments of appellant I in the written and oral proceedings can be summarised as follows:

The invention as defined in claim 1 of the main request can be carried out by the person skilled in the art in the light of the description. In particular, it is possible to produce particles having the specified mean particle size of 25-55 micrometers and the specified particle size distribution of between 10-110 micrometers.

As indicated in paragraph [0030] of the patent in suit, the mean particle size is a weight mean. The particle size distribution refers to a substantially Gaussian distribution of the particles between 10-110 micrometers. It is possible that a small amount of the particles falls outside the specified range.

Such a distribution is obtained when carrying out the Examples of the patent in suit. In the event that a different distribution is obtained, it would be possible to separate out particles having the desired particle size.

VIII. The arguments of appellants II and III in the written and oral proceedings can be summarised as follows:

The patent in suit does not provide a disclosure which would enable the person skilled in the art to carry out the invention as defined in claim 1 of the main request.

In particular, no process is disclosed which would result in the production of particles having the specified mean particle size of 25-55 micrometers and

the specified particle size distribution of between 10-110 micrometers.

When producing particles by an emulsion process, as suggested in paragraph [0022] of the patent in suit, it is impossible to exclude the formation of particles falling outside the specified particle size distribution. As stated at paragraph [0033] of the patent in suit, "agitation speed, and composition and level of the suspending agent are critical factors in determining the particle size distribution". There is, however, no indication as to what parameters should be used in the manufacture of the particles. As stated at page 5, line 1, "the typical particle size from suspension is about 10-1000 micrometers".

The process of Example 2A results in a weight mean of 20-30 micrometers, and that of Example 2B results in a weight mean of 35-60 micrometers. These examples thus fall outside the range specified in claim 1.

Documents D53 to 56 demonstrate that reworking of Examples 2A and 2B of the patent in suit gives rise to a product having a mean particle size greater than that specified in claim 1 and a particle size distribution falling outside the specified range.

Reasons for the Decision

1. *Main request of appellant I*

1.1 Disclosure of the invention

Claim 1 of the main request specifies that the particles, which, together with the matrix, make up the claimed polymeric article, have a mean particle size of 25-55 micrometers and a particle size distribution between 10-110 micrometers. As stated in paragraph [0030], the mean particle size is a weight mean.

There is, however, no disclosure as to how particles satisfying these criteria may be obtained.

According to paragraph [0033], the particles may be made by a suspension process which produces a particle size of about 10 - 1000 micrometers. This paragraph thus does not provide any indication of how the more restricted range of between 10-110 micrometers, as specified in claim 1, may be obtained.

Examples 1, 2A, 2B and 2C of the patent in suit disclose processes for producing crosslinked particles using the suspension process. The method of Example 1 produces particles having a weight mean of 35 microns (page 6, lines 45 and 46), Example 2A produces particles having a weight mean of 20-30 microns (page 7, line 15), Example 2B produces particles having a weight mean of 35-60 microns (page 8, line 4), and Example 2C produces particles having a weight mean of 50 microns (page 8, line 30). The weight mean particle size of 25-55 micrometers, as specified in claim 1, is thus not

necessarily and unambiguously obtained by following the instructions given in the Examples.

In addition, there is no indication in the patent in suit of the particle size distribution of the particles obtained by following the instructions given in the Examples.

However, reworkings of Examples 2A and 2B are reported upon in documents D53 to D56, which show that beads prepared by the procedures disclosed in the patent in suit include a significant amount having a particle size outside the range of 10-110 micrometers.

Thus, documents D53a and D53b report on reworkings of Example 2A, the particle size distribution of the product being shown in document D54. This shows a significant amount of particles having a size above 110 micrometers as well as the presence of small particles below 10 micrometers. Similarly, documents D55a, D55b and D56 show that a reworking of Example 2B results in particles having a particle size distribution extending beyond the specified range.

It is thus not the case that, as suggested by appellant I, following the examples will inevitably result in a product having the particle size distribution specified in claim 1.

Alternatively, it was also suggested by appellant I that particles having the desired particle size range could be separated out from the product of the Examples. There is, however, no disclosure in the patent in suit which suggests that such a step should be used and it

is not clear whether or not such a product would have the specified mean particle size. Whilst Example 2C refers to centrifuging (page 8, line 30), this is done to separate particles from solution.

1.1.1 The disclosure of the patent in suit is thus not sufficient to enable the person skilled in the art to carry out the invention.

2. *Auxiliary request of appellant I*

In point 1 above, the references in the claims to "mean particle size" are construed as referring to "weight mean particle size". The amendment to the claims so as to refer explicitly to "weight mean particle size" thus does not affect the arguments as set out under point 1 above.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The patent is revoked.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber