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**Datasheet for the decision
of 10 April 2018**

Case Number: T 0411/15 - 3.2.05
Application Number: 05825220.6
Publication Number: 1827796
IPC: B29C49/06, C08K5/00, B29C49/00
Language of the proceedings: EN

Title of invention:

Process for preparing bottles from injection stretch blow moulding of compositions of polypropylene and non-sorbitol nucleating agents

Patent Proprietor:

Total Research & Technology Feluy

Opponents:

Borealis AG
Basell Poliolefine Italia S.r.l.

Headword:

Relevant legal provisions:

EPC 1973 Art. 84
EPC Art. 123(2)
RPBA Art. 13(1), 13(3)

Keyword:

Claims - lack of clarity - main request (yes)

Amendments - added subject-matter - all requests (yes)

Late-filed auxiliary request - admitted (yes)

Decisions cited:

G 0003/14

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 0411/15 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 10 April 2018

Appellant: Total Research & Technology Feluy
(Patent Proprietor) Zone Industrielle C
7181 Seneffe (BE)

Representative: Valérie Martine Mellet
Patent42
34 rue Dicks
4081 Esch sur Alzette (LU)

Respondent: Borealis AG
(Opponent 1) IZD Tower
Wagramerstrasse 17-19
1220 Wien (AT)

Representative: Berthold Lux
Maiwald Patentanwalts- und
Rechtsanwaltsgesellschaft mbH
Elisenhof
Elisenstraße 3
80335 München (DE)

Respondent: Basell Poliolefine Italia S.r.l.
(Opponent 2) Via Soperga 14/A
20127 Milano (IT)

Representative: Giuseppe Colucci
Basell Poliolefine Italia S.r.l.
Intellectual Property
Piazzale G. Donegani 12
44122 Ferrara (IT)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 15 December**

2014 revoking European patent No. 1827796
pursuant to Article 101(3)(b) EPC.

Composition of the Board:

| | |
|-----------------|-------------|
| Chairman | M. Poock |
| Members: | P. Lanz |
| | R. Cramer |
| | F. Rousseau |
| | G. Weiss |

Summary of Facts and Submissions

- I. The appeal by the patent proprietor is against the decision of the opposition division to revoke European patent EP-B-1 827 796 since the subject-matter of claim 1 according to any of the main request and auxiliary requests 1 to 8 was insufficiently disclosed.
- II. During the opposition proceedings, the opponents had raised the grounds for opposition according to Articles 100(a) (lack of novelty and lack of inventive step), 100(b) and 100(c) EPC 1973.
- III. Oral proceedings were held before the board of appeal on 10 April 2018.
- IV. The appellant requested that the decision under appeal be set aside and the case be remitted to the department of first instance for further prosecution on the basis of the claims of the main request or of one of auxiliary requests 2a, 3, 4, 5a, all filed with letter dated 12 March 2018, or of auxiliary request 5b filed during the oral proceedings.
- V. The respondents requested that the appeal be dismissed or alternatively that the case be remitted to the department of first instance for examination of novelty and inventive step.
- VI. The documents referred to during the appeal proceedings include the following:

D9: Lilli Manolis Sherman (Ed.), "New Clarifiers & Nucleators" in www.plasticstechnology.com, July 2002, p. 44-49;

D21: Nello Pasquini (Ed.), Polypropylene Handbook, 2nd Edition 2005, Carl Hanser Verlag, page 282.

VII. Claims 1 and 5 of the main request are worded as follows:

"1. A process for preparing bottles with a two-machine system comprising the steps of:

- a. providing a composition comprising propylene, prepared with a Ziegler-Natta catalyst system and an inorganic non-sorbitol clarifying agent;
- b. preparing a pre-form by injection moulding on a multi-cavity mould at injection temperature of from 210 to 220 °C;
- c. cooling the pre-form at room temperature;
- d. transporting the pre-form to the blow-moulding machine;
- e. re-heating the pre-form in the blow-moulding machine to a temperature of from 90 to 140°C, following a predetermined temperature profile;
- f. passing the re-heated pre-form through an equilibrium zone;
- g. stretching the pre-form axially with a stretch rod having a speed of 1400 to 1800 mm/s;
- h. blowing the stretched pre-form radially with an air pressure of 12 to 18 bars;
- i. retrieving bottles having low haze values."

"5. The process of any one of claims 1 to 4 wherein the non-sorbitol clarifying agent is selected from sodium salts, lithium salts, phosphate salts, aluminium salts, lithium or sodium benzoate or combinations thereof."

VIII. Compared with the main request, claim 1 of auxiliary request 2a contains the following amendments:

"a. providing a composition comprising propylene, prepared with a Ziegler-Natta catalyst system and ~~an inorganic~~ non-sorbitol clarifying agent selected from sodium salts, aluminium salts, lithium or sodium benzoate, or combinations thereof;"

IX. Compared with auxiliary request 2a, claim 1 of auxiliary request 3 is amended as follows:

"a. providing a composition comprising propylene, prepared with a Ziegler-Natta catalyst system and an-
[sic] non-sorbitol clarifying agent selected from ~~sodium salts, aluminium salts, lithium or sodium benzoate, or combinations thereof;~~"

X. Compared with the foregoing version, claim 1 of auxiliary request 4 contains the following amendments:

"a. providing a composition comprising propylene wherein the polypropylene is a random copolymer of propylene, wherein the comonomer is ethylene and wherein the amount of comonomer is of up to 10 wt% based on the weight of the random copolymer, prepared with a Ziegler-Natta catalyst system and a non-sorbitol clarifying agent selected from, aluminium salts;"

XI. Compared with auxiliary request 4, claim 1 of auxiliary request 5a contains the following amendments:

"b. preparing a pre-form by injection moulding on a multi-cavity mould at injection temperature of from [sic] ~~210 to 220~~215 °C;"

XII. Compared with auxiliary request 5a, claim 1 of auxiliary request 5b contains the following amendments:

"a. providing a composition comprising propylene wherein the polypropylene is a random copolymer of propylene, wherein the comonomer is ethylene and wherein the amount of comonomer is of up to 10 wt% based on the weight of the random copolymer, prepared with a Ziegler-Natta catalyst system and a non-sorbitol clarifying agent ~~selected from, aluminium salts~~ comprising aluminum hydroxybis{2,2'-methylenebis[4,6-di(tert-butyl)phenyl]phosphate};"

XIII. The appellant's submissions may be summarised as follows:

Regarding the clarity of the feature "inorganic non-sorbitol clarifying agent" in claim 1 of the main request, it was first noted that clarifying agents were a sub-class of nucleating agents, namely those which helped to reduce haze. In that respect, reference could be made to document D9, page 45, middle column, second full paragraph. At the filing date of the patent, sorbitol-based compounds were generally known, the term "sorbitol" was therefore clear for the skilled person. By logical extension, the claim wording "non-sorbitol" was equally clear. Page 282 of the Polypropylene Handbook D21, the printing date of which was during the priority year, confirmed that the skilled person was well aware of such clarifying agents, for example NA-21 and NA-11. Paragraph [0013] of the patent equally contained information on this issue. Furthermore, the term "inorganic" was introduced into claim 1 for a better distinction of the non-sorbitol compounds from the prior art. Although this was not the skilled

person's general understanding, in the context of the present patent the feature "inorganic non-sorbitol clarifying agent" had to be interpreted as meaning non-sorbitol clarifying agents which are metal salts. Even if a metal salt could be considered to refer to an organic compound when looked at from the organic side, it was inorganic when seen from its metal side. The wording of claim 1 of the main request was thus clear.

On the issue of added subject-matter, reference was made to original claim 5, which contained two alternatives ("nucleating or clarifying agent"). Present claim 5 corresponded to the second of these alternatives. Moreover, as stated above, clarifying agents were a sub-class of nucleating agents. This amendment did thus not add subject-matter. The additional definition that they were "inorganic" in claim 1 was equally allowable since it was implicitly disclosed in original claim 5.

The above reasoning on added subject-matter was not only valid for the main request, but also for auxiliary requests 2a, 3, 4 and 5a. The examples in the application as filed provided a further basis for limiting the clarifying agent to aluminium salts.

Claim 1 of auxiliary request 5b was based on original example R4, which specified the clarifying agent as being NA-21. The chemical name of its main ingredient was added to the claim. Even if further components could indeed be present in NA-21, it was known for its main ingredient. Moreover, it was implicit from the comonomer content C2 in table I of the original application that a random copolymer was used in example R4. Further restrictions of claim 1 as to the specific comonomer content of example R4 were not required.

XIV. The respondents' submissions were essentially as follows:

In the opposed patent, the term "inorganic" was used only once in paragraph [0009]. However, this passage did not support the appellant's interpretation of the claim. Most of the agents contained in claim 5 were salts of organic compounds. In view their nature as salts, no clear distinction as to their organic or inorganic character was possible. In fact, the skilled person would not consider NA-21, which was an organophosphate salt, to be inorganic. For these reasons, the reference to inorganic non-sorbitol clarifying agents rendered claim 1 unclear. It was added that the Polypropylene Handbook D21 cited by the appellant was post-published and did not form part of the prior art.

Moreover, claim 5 recited a list of compounds to be used as clarifying agent in the process of claim 1. However, in the original application (cf. page 3, lines 4 to 7) the same compounds were presented as nucleating agents, while original claim 5 referred to them as "nucleating or clarifying agents". Consequently, the application as filed did not disclose that all compounds listed in present claim 5 had clarifying properties. In fact, the application as filed contained only one example of a specific amount of a certain aluminium salt (NA-21) which provided a clarifying effect. A generalisation to aluminium salts as such had no basis in the application as filed. Consequently, the wording of claim 5 went beyond the original application. This objection applied, in substance, also to auxiliary requests 2a, 3, 4 and 5a.

Auxiliary request 5b should not be admitted into the proceedings. It was only filed during the oral proceedings and contained added subject-matter: example R4 disclosed NA-21, which was a specific compound and contained not only an aluminium salt but also lithium myristate. In view of that, claim 1 of auxiliary request 5b was an unallowable generalisation of the content of the application as filed.

Reasons for the Decision

1. Main request, clarity

1.1 The respondents object to the wording "inorganic non-sorbitol clarifying agent" in step a. of claim 1 as being unclear.

1.2 From a formal point of view, reference is made to decision G 3/14 (OJ EPO 2015, A102) according to which amended claims of a patent may be examined for compliance with the requirements of Article 84 EPC only when - and then only to the extent that the amendment introduces lack of clarity.

The board observes that this condition is met since the contested wording was not present in claim 1 as granted but added to this claim during the subsequent proceedings. The board is therefore in a position to examine whether the amendment introduces a lack of clarity, as alleged by the respondents.

1.3 As to the substance, the appellant did not submit that the wording "inorganic non-sorbitol clarifying agent" had a recognised meaning in the art. Whereas the designation "non-sorbitol clarifying agent" can be considered to be self-explanatory and to define

clarifying agents which are not based on sorbitol, the question arises as to which sub-category thereof is meant to be defined by the additional term "inorganic". The mere argument by the appellant that this term had to be interpreted in the light of the patent in suit as meaning a metal salt already indicates its lack of clarity in the context of the present claim. Moreover, the contested patent does not provide any support for the appellant's assertion that, contrary to the skilled person's general understanding, the disputed compound should be understood as specifically meaning "metal salt" in the context of the patent in suit. For these reasons, the board is not satisfied that, because of the term "inorganic", the skilled person would define the "inorganic non-sorbitol clarifying agent" of claim 1 as a sub-category of non-sorbitol clarifying agents based on metal salts, as suggested by the appellant.

In view of the above, the board concludes that the wording of claim 1 of the main requests does not clearly define the matter for which protection is sought, contrary to the provisions of Article 84 EPC 1973.

2. *Main request and auxiliary requests 2a, 3, 4 and 5a, added subject-matter*

2.1 Compared with the originally filed version, claim 5 of the main request is worded as follows:

"The process of any one of claims 1 to 4 wherein the non-sorbitol ~~nucleating~~ or clarifying agent is selected from sodium salts, lithium salts, phosphate salts, aluminium salts, lithium or sodium benzoate, ~~etc.~~ or combinations thereof."

2.2 Original claim 5 defines a list of substances which fall under the designation of a non-sorbitol nucleating or clarifying agent. From the original wording it cannot be deduced which of the substances listed fall under the category of a nucleating agent and which are clarifying agents. Nor was it shown, let alone argued that this was known by the skilled person. Nucleators and clarifiers are generally known to the skilled person to essentially jump-start the crystallisation process as the resin cools (cf. document D9, page 45, middle column, lines 14 to 17). Clarifiers are a subclass of nucleators, since not all nucleators lead to sufficient transparency. The amendments carried out in original claim 5 result in the definition that all chemical classes of compounds defined in original claim 5 (to the exception of talc which was deleted) are now defined to be clarifying agents. This goes beyond the subject-matter of original claim 5. It is also noted that the original description refers to the above substances exclusively as nucleating agents (cf. page 3, lines 4 to 7). Hence, neither claim 5 nor any other part of the application as originally filed provides a clear and unambiguous basis for the amendment according to which sodium salts, lithium salts, phosphate salts, aluminium salts, lithium and sodium benzoate each serve as a clarifying agent.

Consequently, the subject-matter of claim 5 of the main request goes beyond the content of the application as filed, Article 123(2) EPC.

2.3 The above reasons equally apply to claim 1 of auxiliary request 2a which still defines the non-sorbitol clarifying agent to be selected from sodium salts, lithium salts, phosphate salts, aluminium salts, lithium or sodium benzoate, or combinations thereof.

The clarifying agent according to auxiliary requests 3, 4 and 5a is limited to aluminium salts. As stated above, the application as filed does not provide a general basis for the use of aluminium salts as clarifying agents. For the sake of completeness, it is added that according to original example R4 a specific amount of NA-21, which according to handbook D21 is a certain aluminium salt, provides a clarifying effect under the processing conditions and with the comonomer content defined in this example. However, one single specific example cannot be regarded as providing an unambiguous basis for generally claiming aluminium salts as such as a clarifying agent to be used in the process of claim 1.

Consequently, auxiliary requests 2a, 3, 4 and 5a do not meet the requirements of Article 123(2) EPC.

3. *Auxiliary request 5b, admissibility*

- 3.1 Auxiliary request 5b was filed after the appellant's statement setting out the grounds of appeal and therefore constitutes an amendment to the appellant's case, the admissibility of which has to be judged on the basis of Article 13(1) RPBA. Following these provisions, the admission of an amendment to a party's case is at the board's discretion. Moreover, Article 13(3) RPBA states that amendments sought to be made after oral proceedings have been arranged shall not be admitted if they raise issues the board or the other parties cannot reasonably be expected to deal with without adjournment of the oral proceedings.
- 3.2 In the case at hand, auxiliary request 5b was filed in reaction to the board's conclusion that the amendments of the main request and auxiliary requests 2a, 3, 4 and

5a introduced a lack of clarity and/or added subject-matter. The filing of auxiliary request 5b is considered a legitimate reaction to the objections discussed in the above sections, which were, as such, developed for the first time during the oral proceedings. Moreover, the amendments to auxiliary request 5b are such that the board and the respondents are able to deal with the request in substance without adjournment of the scheduled oral proceedings.

Based on these considerations, auxiliary request 5b is admitted into the proceedings under Article 13(1) and (3) RPBA.

4. *Auxiliary request 5b, added subject-matter*

4.1 In claim 1 of auxiliary request 5b, the clarifying agent is defined as comprising aluminum hydroxybis{2,2'-methylenebis[4,6-di(tert-butyl)phenyl]phosphate}, which is the main constituent of the NA-21, the clarifying agent used in example R4 of the application underlying the opposed patent. It is uncontested that NA-21 contains further ingredients which are not reflected in the amended claim. Already for this reason, the proposed amendment of claim 1 goes beyond the application as filed, in particular its example R4. Additionally, as set out in section 2.3 above, in this original example a specific amount of a certain aluminium salt compound (comprising a plurality of constituents) provides a clarifying effect under certain processing conditions and with a specific comonomer content. However, this isolated example cannot serve as an unambiguous basis for using an additive comprising aluminum hydroxybis{2,2'-methylenebis[4,6-di(tert-butyl)phenyl]phosphate} as a

clarifying agent in the more general context of process claim 1.

In view of the above, the subject-matter of claim 1 of auxiliary request 5b goes beyond the content of the application as filed, Article 123(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



L. Malécot-Grob

M. Poock

Decision electronically authenticated