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**Datasheet for the decision
of 7 July 2023**

Case Number: T 0350/20 - 3.3.03

Application Number: 13702439.4

Publication Number: 2809717

IPC: C08L23/08

Language of the proceedings: EN

Title of invention:

MULTIMODAL POLYETHYLENE POLYMERS AND PROCESS PREPARING SAID
POLYMER

Patent Proprietor:

Norner AS

Opponents:

Basell Polyolefine GmbH
TotalEnergies OneTech Belgium
Borealis AG

Relevant legal provisions:

EPC Art. 123(2)

Keyword:

Amendments - allowable (no)

Decisions cited:

G 0002/10, T 3142/19



Beschwerdekammern

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Case Number: T 0350/20 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 7 July 2023

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 28 November
2019 revoking European patent No. 2809717
pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman D. Semino
Members: O. Dury
 R. Cramer

Summary of Facts and Submissions

I. The appeal by the patent proprietor lies from the decision of the opposition division revoking European patent No. 2 809 717.

II. Claims 1, 3, 6, 7, 12, 15 and 19 of the application as filed read as follows:

"1. A polyethylene comprising:

(i) 20-70% wt of a lower molecular weight ethylene polymer;

(ii) 20-70% wt of a first higher molecular weight ethylene copolymer; and

(iii) 0.5-9.5% wt of a second higher molecular weight ethylene copolymer."

"3. A polyethylene as claimed in claim 1 or 2, having a multimodal molecular weight distribution."

"6. A polyethylene as claimed in any preceding claim, wherein said second higher molecular weight ethylene copolymer has a higher % wt comonomer content than said first higher molecular weight copolymer."

"7. A polyethylene as claimed in any preceding claim, wherein said second higher molecular weight ethylene copolymer has a comonomer content of 1 to 20 % wt."

"12. A polyethylene as claimed in any preceding claim, wherein said first higher molecular weight ethylene

copolymer has a comonomer content of 0.3 to 2.5 %wt."

"15. A polyethylene as claimed in any preceding claim, wherein said second higher molecular weight copolymer has a greater weight average molecular weight than said first higher molecular weight copolymer."

"19. A polyethylene as claimed in any preceding claim, wherein said lower molecular weight ethylene polymer is an ethylene homopolymer."

III. The decision under appeal was based on the main request and on auxiliary requests 1 to 36 all filed with letter of 7 August 2019 and on auxiliary request 37 filed during the oral proceedings before the opposition division. As far as relevant to the present case, the following conclusions were reached in that decision:

- Neither the main request, nor any of auxiliary requests 1 to 36 met the requirements of Article 84 EPC;
- Auxiliary request 37 was not objectionable pursuant to Article 84 EPC and met the requirements of sufficiency of disclosure. Moreover, claims 1 and 10 of that request satisfied the requirements of Article 123(2) EPC. However, the subject-matter of said claim 1 was not novel over D6 (WO 2007/042216).

Therefore, the patent was revoked.

IV. With their statement setting out the grounds of appeal the patent proprietor (appellant) filed a set of claims as main request and four sets of claims as auxiliary requests. Also, a series of Annexes were filed, among

others an **Annex B1** (in which the basis for the amendments made in the then operative requests was indicated).

- V. Each of opponents 1 to 3 (respondents 1 to 3) replied to the statement of grounds of appeal.
- VI. With letter of 20 March 2023 the appellant filed eight sets of claims as main request and auxiliary requests 1 to 7.
- VII. The parties were summoned to oral proceedings and a communication pursuant to Article 15(1) RPBA 2020 was then issued by the Board.
- VIII. Oral proceedings were held on 7 July 2023 in the presence of all parties.
- IX. **The final requests of the parties were as follows:**

The appellant requested that the decision under appeal be set aside and the case be remitted to the opposition division for further prosecution on the basis of the claims of the main request or of one of auxiliary requests 1 to 7, all filed with letter of 20 March 2023.

The respondents requested that the appeal be dismissed.

- X. Claim 1 of the **main request** read as follows (additions as compared to claim 1 of the application as filed in **bold**):

"1. A polyethylene **having a multimodal molecular weight distribution**, comprising:

(i) 20-70% wt of a lower molecular weight ethylene **homopolymer**;

(ii) 20-70% wt of a first higher molecular weight ethylene copolymer, **wherein said first higher molecular weight ethylene copolymer has a comonomer content of 0.3 to 2.5 %wt**; and

(iii) 0.5-9.5% wt of a second higher molecular weight ethylene copolymer, **wherein said second higher molecular weight ethylene copolymer has a comonomer content of 1 to 20 % wt**,

wherein said second higher molecular weight ethylene copolymer has a greater weight average molecular weight than said first higher molecular weight ethylene copolymer, and

said second higher molecular weight ethylene copolymer has a higher % wt comonomer content than said first higher molecular weight copolymer."

Claims 1 of **auxiliary requests 1 and 2** were identical and corresponded to claim 1 of the main request in which:

- The following feature was added to the definition of component (ii): "wherein said first higher molecular weight ethylene copolymer has a weight average molecular weight of 200,000 to 700,000 g/mol"; and
- The following feature was added to the definition of component (iii): "wherein said second higher molecular weight ethylene copolymer has a weight average molecular weight of 200,000 to

2,000,000 g/mol".

Claim 1 of **auxiliary request 3** corresponded to claim 1 of the main request in which:

- In the definition of component (ii) it was further specified that the first higher molecular weight ethylene copolymer has "a Mw/Mn of 5-18"; and
- In the definition of component (iii) it was further specified that the second higher molecular weight ethylene copolymer has "a Mw/Mn of 5-23".

Claims 1 of **auxiliary requests 4 and 5** were identical and corresponded to claim 1 of auxiliary request 1, in which the definition of components (ii) and (iii) was further modified in the same manner as in claim 1 of auxiliary request 3.

Claims 1 of **auxiliary requests 6 and 7** were identical and corresponded to claim 1 of auxiliary request 4 in which the amount of component (iii) was limited to "1.2-9.5% wt" (instead of 0.5-9.5% wt).

XI. The appellant's arguments, in so far as they are pertinent for the present decision, may be derived from the reasons for the decision below. They are essentially as follows:

Claim 1 of each of the main request and of auxiliary requests 1 to 7 met the requirements of Article 123(2) EPC.

XII. The respondents' arguments, in so far as they are pertinent for the present decision, may be derived from the reasons for the decision below. They are essentially as follows:

Claim 1 of each of the main request and of auxiliary requests 1 to 7 did not meet the requirements of Article 123(2) EPC.

Reasons for the Decision

Main request

1. It was undisputed that the operative main request is identical to auxiliary request 37 dealt with in the decision under appeal.
2. Amendments - Article 123(2) EPC
 - 2.1 In order to assess whether claim 1 of the main request meets the requirements of Article 123(2) EPC, which was in dispute between the parties, it has to be established if the subject-matter now being claimed extends beyond the content of the application as filed, i.e. whether after the amendments made the skilled person is presented with new technical information (see G 2/10, OJ EPO 2012, 376, point 4.5.1 of the reasons and Case Law of the Boards of Appeal of the EPO, 10th edition, 2022, II.E.1.1 and 1.3.1). In that respect, it has to be assessed if a direct and unambiguous basis for the subject-matter being claimed may be found in the application as filed. In the case of multiple amendments being made, as is the case here for operative claim 1, the question has to be posed whether

the specific combination of features now being defined in said claim 1 emerges from the application as filed, whereby the description is not to be viewed as a reservoir from which features pertaining to separate embodiments can be freely combined in order to artificially create a certain embodiment (Case Law, *supra*, II.E.1.6.1).

2.2 In that regard, claim 1 of the main request differs from claim 1 of the application as filed in that the following features were added:

- (a) The polyethylene being claimed should have a multimodal molecular weight distribution;
- (b) The lower molecular weight ethylene copolymer should be a homopolymer;
- (c) The comonomer content of the first higher molecular weight ethylene copolymer should be in the range of 0.3 to 2.5 % wt;
- (d) The comonomer content of the second higher molecular weight ethylene copolymer should be in the range of 1 to 20 % wt;
- (e) The second higher molecular weight ethylene copolymer should have a greater weight average molecular weight than the first higher molecular weight ethylene copolymer;
- (f) The second higher molecular weight ethylene copolymer should have a higher % wt comonomer content than the first higher molecular weight ethylene copolymer.

2.3 It remained undisputed between the parties that dependent claims 3, 6, 7, 12, 15 and 19 of the application as filed provide a basis for each of the six individual amendments made. The Board has no reason to be of a different opinion.

2.4 However, the point in dispute was whether a valid basis was given in the application as filed for the specific combination of these features, as now being defined in operative claim 1. In particular, the respondents contested the findings of the opposition division that claim 1 of the main request satisfied the requirements of Article 123(2) EPC, whereby they considered that the specific combination of features of operative claim 1 could only be arrived at after performing multiple selections within the ambit of the application as filed, for which no valid support was given in the application as filed (respondent 2's rejoinder to the statement of grounds of appeal: sections 4.3 to 4.6; the objection was adhered to by all respondents at the oral proceedings before the Board). To the contrary, the appellant followed the line taken by the opposition division in the decision under appeal and considered that the subject-matter of operative claim 1 amounted to the combination of original independent claim 1 with each of dependent claims 3, 6, 7, 12, 15 and 19 (points 41.1 and 41.2 of the reasons; Annex B1 filed with the statement of grounds of appeal), whereby said dependent claims amounted to pointers to the combination of amendments that had been made.

2.5 In that regard, the Board considers that although dependent claims may under certain circumstances be seen as pointers to amendments made, this is not always mandatorily the case (see e.g. the counter-examples to the decisions relied upon by the opposition division in

the second paragraph of point 41.2 of the reasons, which are indicated in the following sentence of the same passage of the Case Law that was apparently relied upon by the opposition division, namely II.E.1.6.1.a, first paragraph). In particular, the present Board endorses the view of the deciding Board in case T 3142/19 (points 6.4 and 6.5 of the reasons; see also the reference to that passage of the decision in the above mentioned passage of the Case Law, II.E.1.6.1.a) that whether or not this is the case depends on the specifics of the case, in particular on the level of complexity caused by the optional features. In particular it may have to be taken into account that an excessive number of optional features may have an impact on the assessment of compliance with Article 123(2) EPC, in that, in a forest of optional features, a singled-out individual combination may not be directly and unambiguously derivable by the skilled person.

- 2.6 In the present case, the amendments made are based on 6 dependent claims among a total of 22 claims that were all dependent on the preceding claims - among others, claim 1 - as originally filed. Further considering that the application as filed was drafted in such a manner that it contains a very high number of preferred, more preferred and most preferred embodiments for many - if not all - of these optional features (see e.g. the passages from page 9, line 6 to page 20, line 19), the subject-matter now defined in operative claim 1 can only be arrived at by combining specific passages related to some preferred embodiments of the application as filed, while other also preferred embodiments were disregarded. In the absence of any pointers to the specific combination of features made, the subject-matter now being claimed cannot be held to

emerge from the application as filed, as was put forward by respondent 2 (rejoinder sections 4.4 to 4.6).

2.7 At the oral proceedings before the Board, the appellant argued that considering the multiple dependency of the original set of claims (each dependent claims 2 to 23 was indeed dependent on any of the preceding claims), each combination of these claims was explicitly disclosed. Also, the amendments made were all directed to limit the definition of components (i) to (iii): the fact that these components were already specified in claim 1 of the application as filed showed to the skilled person that they were important for the invention.

However, the Board does not agree with these views. Indeed, in view of the dependency of claims 2 to 23 of the application as filed on any of the preceding claims, the original set of claims effectively comprised a multitude of possible combinations of features. Under these circumstances, it is established case law that in order to meet the requirements of Article 123(2) EPC, it should be shown that the combination of features being claimed emerges from the application as filed as a whole (see references to the case law indicated in sections 2.1 and 2.5 above). The mere fact that each individual feature is disclosed in the application as filed and that such a combination of features may have been comprised within all possible embodiments encompassed by the original set of claims is not sufficient. For that reason, the appellant's arguments are rejected.

2.8 At the oral proceedings before the Board, the appellant put forward that the specific combination of features

now being specified in claim 1 of the main request was derivable from several passages of the application as filed (page 4, line 33 to page 5, line 2; page 10, lines 13-18; page 14, lines 22-30; page 50, lines 1-5), whereby it was further derivable from these passages that said features were indeed related to the beneficial effects of the invention. Therefore, these passages of the application as filed effectively constituted pointers to the combination of features now defined in operative claim 1, so the appellant.

2.8.1 However, the passage at page 4, line 33 to page 5, line 2 of the application as filed is very general and, in the Board's view, merely indicates that in order to obtain the "highly desirable combination of properties" aimed at, the polyethylene composition according to the invention should be "multimodal" and contain a "relatively small amount" of "a relatively high molecular weight ethylene copolymer". Also, said passage contains no information in terms of structural features defining any component of the composition being claimed, in particular no limitation in terms of the nature of the ethylene polymer used as component (i) originally defined in a general manner in claim 1 of the application as filed (but which is now limited to a homopolymer), the amounts of comonomers (either in absolute and relative terms, both of which are now defined in a limited manner) of copolymers (ii) and (iii) originally defined in claim 1 of the application as filed and the relative levels in molecular weight of said first and second higher molecular weight copolymers (ii) and (iii).

2.8.2 Similarly, the passage at page 10, lines 13-18 of the application as filed merely indicates that polyethylene compositions with good properties may be obtained by

using a polyethylene composition exhibiting a "trimodal and broad molecular weight distribution", whereby the presence of a small amount of a second high molecular weight ethylene copolymer (i.e. component (iii) as defined in claim 1 of the application as filed) is beneficial. However, considering that claim 1 of the main request does not contain any limitation in terms of molecular weight distribution, that passage of the application as filed cannot provide a valid basis for the subject-matter of claim 1 of the main request at the present level of generality. In addition, said passage remains very general and merely points to the importance of the trimodal character of the polyethylene composition being claimed but provides no specific information regarding the nature of the lower molecular weight polyethylene component (i) and/or the levels of comonomers and molecular weight (in absolute and relative terms) of the higher molecular weight polyethylene components (ii) and (iii).

2.8.3 Similarly, the passage at page 14, lines 22-30 of the application as filed merely indicates that some beneficial properties may be related to the fact that the second higher molecular weight ethylene copolymer which is present in a small amount in the compositions of the invention should contain "a relatively high amount of comonomer". However, again, said statement provides no specific information regarding the nature of the lower molecular weight polyethylene component (i) and/or the levels of comonomers and molecular weight (in absolute and relative terms) of the higher molecular weight polyethylene components (ii) and (iii).

2.8.4 The same conclusion is valid regarding the passage at page 50, lines 1-5 of the application as filed, which

merely discloses that beneficial properties may be related to the fact that the third polymer has a "relatively high molecular weight and a relatively high comonomer content".

2.8.5 During the oral proceedings, the appellant put forward that the use of a relative language in the above indicated passages of the application as filed would be understood by the skilled person as a clear indication that the second higher molecular weight ethylene copolymer (component (iii) of the polyethylene composition being claimed) should have both a greater weight average molecular weight and a larger comonomer content than the first higher molecular weight copolymer (component (ii) of the polyethylene composition being claimed), as now defined in operative claim 1.

a) However, that argument is not persuasive because the statements made in the passages of the application as filed relied upon by the appellant remain of a very general nature and do not specifically hint at the specific combination of amendments that was made, in particular regarding the levels of comonomers and molecular weight (in absolute and relative terms) of the higher molecular weight polyethylene components (ii) and (iii).

b) In that respect, it is in particular noted that the ranges of comonomer contents and molecular weight of components (ii) and (iii) defined in the dependent claims of the application as filed even allowed that component (ii) could have a higher comonomer content or a higher molecular weight than component (iii) (see claims 7 and 12 of the application as filed for the comonomer content and claims 16 and 17 of the

application as filed for the molecular weight).

c) In addition, as noted by respondent 3 during the oral proceedings before the Board, the fact that the comonomer contents of components (ii) and (iii) were not even disclosed in any of the examples of the application as filed (page 41, line 21 to page 43, line 10; pages 47 and 49-50; tables 1A, 1B and 2), which was not contested by the appellant, confirms that the skilled person would, even in view of the disclosure of the application as filed as a whole, have no reason to consider that the levels of comonomer content of the higher molecular weight copolymers (ii) and (iii) were, for any reasons, special or important for the polyethylene compositions of the invention.

d) For these reasons, the appellant's argument is not persuasive.

2.8.6 The Board is further satisfied that, in view of the generic nature of each of the passages relied upon by the appellant during the oral proceedings before the Board, also the combination of these passages of the application as filed does not allow to conclude that there is any pointer in the application as filed to the specific combination of original claims 3, 6, 7, 12, 15 and 19.

2.8.7 At the oral proceedings before the Board, the appellant put forward that it was specifically indicated in decision T 3142/19 (reasons 6.1 and 6.2) that if the description indicated that some combination (of dependent claims) was desirable, or necessary to solve a technical problem, then a clear pointer to - and thus disclosure of - the combination was provided.

a) However, since in the present case the Board does not share the appellant's view that the application as filed provides such indications (see points 2.8.1 to 2.8.6 above), the Board is satisfied that the present decision does not diverge from the findings of T 3142/19.

b) The fact that it is further indicated in section 6.2 of the reasons of T 3142/19 that the absence of such a pointer does not automatically mean that the combination is not derivable by the skilled person is also not relevant since, as indicated in section 2.5 above, the conclusion reached effectively depends on the specifics of the case. However, after careful consideration of the appellant's arguments, as clear from the whole preceding analysis, the Board reaches in the present case the conclusion that there was no valid basis in the application as filed for the specific combination of features now specified in operative claim 1, i.e. the subject-matter of claim 1 was not directly and unambiguously derivable from the application as filed.

c) Therefore, the appellant's argument is rejected.

2.8.8 For these reasons, the appellant's argument that the specific combination of original claims 3, 6, 7, 12, 15 and 19 was directly and unambiguously derivable from the application as filed did not convince.

2.9 In view of the above, claim 1 of the main request does not meet the requirements of Article 123(2) EPC and the main request, as a whole, is not allowable.

Auxiliary requests 1 to 7

3. Article 123(2) EPC
- 3.1 Claim 1 of each of operative auxiliary requests 1 to 7 is based on claim 1 of the main request, in which one or more further features were added. Therefore, since the main request does not satisfy the requirements of Article 123(2) EPC for the reasons indicated in section 2 above, the same conclusion is bound to be drawn for each of auxiliary requests 1 to 7. It is noted that such a preliminary conclusion was indicated in the Board's preliminary opinion (communication: sections 14.1 and 14.2), which remained uncontested by the appellant, in particular at the oral proceedings before the Board. In the absence of any counter-arguments or any different arguments for the auxiliary requests (as compared to the main request), there are no reasons for the Board to deviate from that preliminary opinion. For these reasons, claim 1 of each of auxiliary requests 1 to 7 does not meet the requirements of Article 123(2) EPC and these requests are therefore not allowable.
- 3.2 In view of the above conclusion that none of auxiliary requests 1 to 7 meets the requirements of Article 123(2) EPC, there is no need for the Board to decide on the admittance of any of these requests, which was, for some of them, in dispute between the parties.
4. Since none of the appellant's requests is allowable, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

D. Semino

Decision electronically authenticated