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Datasheet for the decision of 14 November 2025

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Application Number: 15723620.9

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Language of the proceedings: EN

Title of invention:
HIGH PERFORMANCE MOISTURE BARRIER FILMS AT LOWER DENSITIES

Patent Proprietor:
Chevron Phillips Chemical Company LP

Opponents:
SABIC Global Technologies B.V. /
SABIC Petrochemicals B.V.
TotalEnergies OneTech Belgium

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
Novelty - main request - public prior use (no)
Inventive step - auxiliary request - non-obvious alternative

Decisions cited:
T 1711/16

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Case Number: T 1713/23 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 14 November 2025

Appellant 1: (Patent Proprietor)	Chevron Phillips Chemical Company LP 10001 Six Pines Drive The Woodlands, Texas 77380 (US)
Representative:	Potter Clarkson Chapel Quarter Mount Street Nottingham NG1 6HQ (GB)
Appellants 2: (Opponents 1)	SABIC Global Technologies B.V. / SABIC Petrochemicals B.V. Plasticlaan 1 / Europaboulevard 1 4612 PX Bergen op Zoom / 6135 LD Sittard (NL)
Representative:	Sabic Intellectual Property Group Sabic Intellectual Property Department P.O. Box 3008 6160 GA Geleen (NL)
Party as of right: (Opponent 2)	TotalEnergies OneTech Belgium Zone Industrielle C 7181 Seneffe (BE)
Representative:	Mellet, Valérie Martine Patent 42 5, rue Dicks 4081 Esch-sur-Alzette (LU)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 25 July 2023 concerning maintenance of the European Patent No. 3140331 in amended form.**

Composition of the Board:

Chairman	D. Semino
Members:	M. Barrère
	M. Millet

Summary of Facts and Submissions

I. The appeals of the patent proprietor and opponents 1 lie from the interlocutory decision of the opposition division concerning maintenance of European Patent No. 3 140 331 in amended form on the basis of the claims of auxiliary request 11 filed initially as auxiliary request 9 with letter of 16 February 2023 and an adapted description. This decision was also based on the following requests:

- main request: patent as granted;

- auxiliary requests 1 to 7 filed with the reply to the notices of opposition (letter of 13 December 2021);

- auxiliary request 8 filed with letter of 16 February 2023 and

- auxiliary requests 9 and 10 filed respectively as auxiliary requests 10 and 13 with letter of 16 February 2023.

II. Claim 1 of the main request and of auxiliary requests 1 and 2 read as follows:

"1. A metallocene-catalyzed polyethylene copolymer comprising an alpha olefin comonomer, having

a short chain branching content of greater than 0.6 short chain branches per 1,000 carbon atoms,

a melt index ($I_{2.16}$) of greater than 0.8 g/10 min as determined in accordance with ASTM D1238,

a zero shear viscosity (η_0) of from 1 x 10^2 Pa-s to 4 x 10^3 Pa-s,

a ratio of the z-average molecular weight to a weight average molecular weight (Mz/Mw) of from 1.9 to 2.7 and

a ratio of a z-average molecular weight to a number average molecular weight (Mz/Mn) of from 4 to 15, and

which when tested in accordance with ASTM F1249 displays a moisture vapor transmission rate of less than or equal to 3.54 x 10^{-7} kg/m/day (0.9 g-mil/ 100 in^2/day)."

Claim 1 of auxiliary request 3 differed from claim 1 as granted in that the copolymer was additionally characterised by

"a z-average molecular weight (Mz) of from 125 kg/ mol to 260 kg/mol"

The exact wording of the claims of auxiliary requests 4 to 11 is not relevant for the present decision.

III. The following documents were *inter alia* cited in the decision of the opposition division:

D2: WO 2013/033689 A1
D10: Brochure concerning polyethylene products of Total Petrochemicals, February 2008

D11: Brochure "Lumicene Metallocene Polyethylene for Blown and Cast films", January 2010
D14: Quality certificate, material mPE M4040, dated 1 July 2011
D16: Analysis report "DDT POL-FPP-21-0054" dated 9 June 2021
D17: Declaration by Christian Penu dated 16 July 2021
D18: Test report BA 28376, 9 June 2021
D32: Declaration by Christian Penu dated 17 February 2023
D33: Analysis report "Lot analyse formulier S6022117170", dated 16 February 2006
D34: Molecular weight analysis results "PPE-FI-60339 ER2299 Lot : S6022117170", dated 18 November 2006
D35: Analysis report "PPE-FI-60339" dated 20 November 2006
D37: Technical data sheet for "Lumicene® mPE M4040", dated January 2010

IV. The contested decision, as far as it is relevant to the present appeal, can be summarised as follows:

- the subject-matter of granted claim 1 was not novel in view of the prior use products Lumicene® M4040 and Lumicene® M2735. The same conclusion applied to claim 1 of auxiliary requests 1, 2, 8 and 9.

- the subject-matter of claim 1 of auxiliary request 3 lacked an inventive step over document D2 as the closest prior art. The same conclusion applied to claim 1 of auxiliary requests 4 to 7 and 10.

- the subject-matter of claim 1 of auxiliary request 11 was novel in view of the prior use products

Lumicene® M4040 and Lumicene® M2735 and involved an inventive step over document D2 as the closest prior art. Furthermore, auxiliary request 11 complied with the requirements of sufficiency of disclosure.

V. The patent proprietor and opponents 1 (respectively appellants 1 and 2) filed an appeal against this decision. With the statement of grounds of appeal, appellant 1 filed fourteen auxiliary requests.

VI. Opponent 2 is party as of right under Article 107 EPC. Although opponent 2 filed a reply to appellant 1's statement of grounds of appeal, they indicated in a letter dated 4 September 2025 that they would not be attending the oral proceedings scheduled by the Board.

VII. Oral proceedings were held before the Board on 14 November 2025 in the presence of both appellants and in the absence of the party as of right.

VIII. The requests of the parties were as follows:

Appellant 1 requested that the decision under appeal be set aside and that the patent be maintained as granted (main request); alternatively, that the patent be maintained on the basis of one of auxiliary requests 1 to 14 filed with the statement of grounds of appeal. Appellant 1 further requested that the appeal of appellants 2 be rejected as inadmissible.

Appellants 2 requested that the decision under appeal be set aside and the patent be revoked.

The party as of right did not make any request but stated in writing that the patent should be revoked.

IX. The main request (patent as granted) and auxiliary requests 1 to 3 correspond to the main request and auxiliary requests 1 to 3 dealt with in the decision under appeal. Reference is made to above point II. for the wording of claim 1.

The exact wording of the claims of auxiliary requests 4 to 14 is not relevant for the present decision.

X. The parties' submissions, in so far as they are relevant, can be derived from the reasons for the decision set out below. They essentially concerned the following issues:

- the novelty of granted claim 1 in view of the public prior use of Lumicene® M4040 (point 1. of the reasons);

- the inventive step of claim 1 of auxiliary request 3 over D2 as the closest prior art (point 4. of the reasons) and

- the admissibility of appellants 2's appeal (point 6. of the reasons).

Reasons for the Decision

Main request (patent as granted)

1. Novelty over the public prior use of Lumicene® M4040

1.1 In the contested decision the opposition division found that:

(a) The alleged public prior use of the Lumicene® M4040 polymer had occurred before the priority date of the opposed patent. In particular, convincing evidence was provided that lot H105E00248 of that product had been sold and delivered to Skymark Packaging International on 1 July 2011 (contested decision, page 9, point 1.2.2).

(b) The evidence provided by opponent 2 showed that the Lumicene® M4040 product had not changed significantly over time and that the data provided for lot H902E00076 (D17) was representative of the product sold before the priority date such as lots H105E00248 and S0602117170 (contested decision, second half of page 10 to page 11, second paragraph).

(c) The analyses of lot H902E00076 provided by opponent 2 showed that this product was characterised by all features of granted claim 1 (contested decision, second half of page 11 to page 12, first paragraph).

On this basis, the opposition division concluded that the subject-matter of granted claim 1 was not novel over the public prior use of Lumicene® M4040.

1.2 Appellant 1 contested these findings for the following reasons (see statement of grounds of appeal, points 2.1 to 2.17):

- The opposition division incorrectly assumed that the Lumicene® M4040 polymer remained unchanged over time, despite acknowledging batch variations. Differences in short chain branching (SCB) content (6.9 for a batch produced before April 2021 and 3.6 for a batch produced after that date), Mz, Mw, Mz/Mw and hexene content across batches were cited as evidence of such changes.

- Documents D10 and D14 demonstrated that both the density and melt index of the product changed between 2008 and 2021, further disproving the assumption of product uniformity.

- It was stated in declaration D32 submitted by opponent 2 that there were "no drastic changes in process and/or catalysts" used to produce Lumicene® M4040 over time. This statement implied that changes were implemented.

- The MVTR (Moisture Vapour Transmission Rate) had not been measured for any of the alleged prior use samples (such as lot S0602117170) as opponent 2 was unable to obtain a sample for testing. Without access to production process details or catalyst information, the patent proprietor could not be expected to reproduce or evaluate the sample,

making the use of the "balance of probabilities" standard by the opposition division inappropriate.

- The EPO case law required that prior use be proven "up to the hilt", meaning all claim features must be shown to have been disclosed before the priority date. Since the batches relevant for the alleged prior use were not analysed for all features of claim 1, and differences in key properties were present across batches, this standard was not met.

- The patent itself (see paragraph [0117]) indicated that Mw, Mz and SCB significantly influenced MVTR which implied that samples with different polymer properties could not be assumed to exhibit a MVTR as defined in granted claim 1.

- Finally, opponent 2 did not provide concrete details or proof that the specifications of Lumicene® M4040 necessarily satisfied the requirements of granted claim 1. In that regard, appellant 1 pointed out that MVTR, Mw, Mz and SCB did not form part of the Lumicene product specification and were therefore not monitored. As to the properties present in the specifications such as the melt index (MI) or the density, the differences between the batches were important. For examples, the MI of lot H105E00248 (commercialised before the priority date of the patent) was 4.46 g/10 min while the MI of lot H902E00076 (produced and analysed after the priority date of the patent) was 3.92 g/10 min. Both values were, however, not according to the specification of 4.0 g/10 min for Lumicene® M4040 (see D10).

1.3 The party as of right endorsed the findings of the opposition division (see rejoinder to appellant 1's statement of grounds of appeal, page 1, last paragraph to page 4, third full paragraph). In particular, they argued that the differences between batches H902E00076 (produced after the priority date of the opposed patent) and S0602117170 (produced before the priority date of the opposed patent) were minor batch-to-batch variations. Contrary to appellant 1's view, the SCB content of batch S0602117170 was not 6.9 but 2.7, corresponding to the number of C_4H_9/1000 C (see D35, second table). In addition the SCB and hexene contents of batch S0602117170 were measured by FTIR (see D35) while the SCB and hexene contents of batch H902E00076 were measured by NMR (see D17). Different methods could provide slightly different results. In addition the MVTR parameter was correlated to the polymer density. Appellant 1's contention that Mz and SCB could significantly influence MVTR was not justified and not supported by evidence.

1.4 In the present case the Board notes that it is not disputed by appellant 1 that the commercial polymer Lumicene® M4040 was made available to the public before the priority date of the opposed patent (see point 1.1 (a) of the present decision). It is also not contested that a batch of that product (batch H902E00076 produced after the priority date of the opposed patent) concerned a metallocene polyethylene copolymer as defined in granted claim 1 including a MVTR of less than or equal to 3.54×10^{-7} kg/m/day (see point 1.1 (c) of the present decision). The central point of dispute is, however, whether it could be expected that a batch of Lumicene® M4040 produced and sold before the priority date of the opposed patent was also characterised by properties - in particular a MVTR - as

defined in granted claim 1. In that respect, appellant 1's contention is that the nature of a commercial Lumicene® M4040 product has changed over time so that it could not be assumed that batches produced before the priority date anticipated the subject-matter of claim 1 only on the basis of data from a product produced after that date.

While it is admitted that the composition of a commercial product designated by a trademark may change over time, the Board considers such changes to be the exception rather than the rule. As noted in decision T 1711/16 (point 5.4 of the Reasons), it is generally assumed that, in the interests of customers, any substantial modification of a commercially available product would normally be accompanied by a corresponding change in its designation.

1.5 That said, to anticipate claim 1, the opponents must still provide convincing evidence that the batches of Lumicene® M4040 made available to the public before the priority date of the opposed patent possessed the properties defined in claim 1. For that purpose, the Board considers that the opponents could demonstrate that the properties of that product remained consistent across batches over time, such that the characteristics of batches produced before the priority date can be reliably inferred from those of later-tested batches.

1.6 Given that almost all evidence for the alleged public prior use lies within the sphere of the party as of right, the Board concurs with appellant 1 that the applicable standard of proof is "beyond reasonable doubt" or "up to the hilt". Applying this standard, the Board must therefore assess whether, in light of the evidence submitted by the party as of right, there

remains reasonable doubt as to whether the batches of Lumicene® M4040 produced before the priority date of the contested patent (such as batches S0602117170 and H105E00248) were characterised by the properties defined in claim 1.

1.7 In the present case, the Board notes that the party as of right provided evidence of properties of batches H902E00076 (produced after the priority date of the opposed patent) and S0602117170 (produced before the priority date of the opposed patent) including Mn, Mw, Mz, the number of C_4H_9/1000 C and the hexene content (see D16, D17, D34 and D35). While there are differences between batches, the Board does not consider that they exceed the variability of normal batch-to-batch variations. In particular, the most significant difference is the number of C_4H_9/1000 C, which is 3.4 for batch H902E00076 and 2.7 for batch S0602117170 (see D17, page 2; D35, page 1, second table). Although the methods used to measure this parameter was not the same in D17 and D35 (FTIR vs. NMR), batch H902E00076 is characterised by a number of C_4H_9/1000 C only 25 % higher than batch S0602117170. The same applies to the hexene content (FTIR vs. NMR) for which different measurement methods were used which might explain the difference between 1,6% and 2%. However, all other measured properties of these two batches (such as Mn, Mw, Mz, density or melt index (MI)) are within a much narrower variability range (see D16, D17, D33 and D34). Accordingly, the Board has no reason to consider that the Lumicene® M4040 product significantly changed between these two batches. This is further supported by the declaration of Mr Penu (D32) stating that "*there were no drastic changes in process and/or catalysts that could have an impact on the mechanical, physical, and rheological properties*

such as zero-shear viscosity, Mn, Mw, Mz" (D32, page 1, fifth paragraph). As previously mentioned, this aligns with the assumption that any substantial change to a commercially available product would normally be accompanied by a corresponding change to its designation, in the interest of customers.

1.8 According to appellant 1, declaration D32 implied that non drastic changes in the manufacturing of the Lumicene® M4040 had been made over time. The Board does not agree with this interpretation of the declaration. Indeed, according to that declaration, no change were made "*that could have an impact on the mechanical, physical, and rheological properties such as zero-shear viscosity, Mn, Mw, Mz*". Hence, even if appellant 1's allegation were true, any change made did not have an effect on the main polymer properties. The Board therefore has no objective reason to consider that the commercial Lumicene® M4040 product may have changed significantly over time.

1.9 The party as of right provided evidence that batch H902E00076 was characterised by a MVTR of 2.24×10^{-7} kg/m/day (see D18; page 2, second table, last row based on the calculation on page 11, last paragraph of the contested decision). This property is about 37% below the upper limit defined in granted claim 1. It was also shown that the MVTR property of different metallocene grades produced with the same process as Lumicene® M4040 was essentially dependent on the polymer density (see D32, page 3, figure). On this basis, and considering that the density of Lumicene® M4040 is about 0.94 (with measured values between 0,938 and 9,41) and did not change significantly over time (see D10, sixth page, first table; D11, fifth page, second table; D14, table; D37, first page, table; D16, page 2,

second line; D33, first line in the test results), it can be assumed that the MVTR of batches produced before the priority date were also characterised by a MVTR close to that of batch H902E00076 and therefore within the range defined in granted claim 1.

1.10 Appellant 1 argued that Mw, Mz and SCB (to the extent that SCB affects crystallinity) could also influence the MVTR (statement of grounds of appeal, page 2, point 2.7). However, as pointed out by the party as of right (rejoinder, page 2, third paragraph and page 3, first and second full paragraphs), the differences in terms of Mw and Mz between batches H902E00076 and S0602117170 are relatively small (about 5%) so that the Board has no reason to believe that this should have a significant effect on the MVTR. In any event, the Mw and Mz of the two batches are significantly lower than the corresponding values reported in tables 3 and 4 of the opposed patent, which would seem to support a lower MVTR according to the teaching of paragraphs [0108], [0117] and [0118] of the patent. As to the level of SCB, the Board agrees that this parameter influences the crystallinity of the polyethylene copolymer. However, it is notorious that the level of crystallinity has an influence on the density (the lower the crystallinity, the lower density). In view of the fact that the density of the Lumicene® M4040 batches did not significantly change over time, the Board considers that the level of crystallinity — and thus the SCB content — remained essentially constant. Consequently, the Board finds that there is no persuasive evidence to suggest that variations in SCB, Mw or Mz between the compared batches could impact the MVTR in such a way as to cause the large variation required for the value to fall outside the range in claim 1. The evidence on file therefore leaves no

reasonable doubt that the MVTR of the Lumicene® M4040 batches produced before the priority date of the opposed patent (such as batches H105E00248 and S0602117170) was within the range defined in granted claim 1. The same conclusion applies to the short chain branching (SCB), melt index (MI), zero shear viscosity (η_0) and the ratio of a z-average molecular weight to a number average molecular weight (Mz/Mn) which were all clearly within the ranges of claim 1 before and/or after the priority date of the opposed patent (see D16, D17 and D33 to D35).

1.11 During the oral proceedings before the Board, appellant 1 pointed out that the ratios of the z-average molecular weight to the weight-average molecular weight (Mz/Mw) of batches H902E00076 and S0602117170 were 1.89 and 1.875, respectively. These values fell within the range of claim 1 (1.9 to 2.7) only as a result of rounding. Appellant 1 contended that, in view of decision G 0001/23, rounding rules should not be applied to a commercial product, which must be considered either within or outside the scope of a claim.

1.12 This is not convincing. The Board does not see why the usual rounding rules should not apply to the properties of commercial products. In any case, the Board cannot identify any passage of G 0001/23 from which such a conclusion could be derived (none was cited by appellant 1). In the present case, the Board can only note that the Mz/Mw ratios of batches produced before and after the priority date were 1.9 (rounded to one digit after the decimal point), both of which fell within the range of claim 1. Therefore, the Board has no reasonable doubt that this property cannot be considered a distinguishing feature.

1.13 Appellant 1 further contended that no evidence was provided that the specification of Lumicene® M4040 must always meet the requirements of granted claim 1 (statement of grounds of appeal, page 3, point 2.8). In this respect, the Board does not see why the knowledge of the specification should affect the conclusion on novelty. In the Board's view, the only relevant question is whether the batches produced before the priority date (and not the specification) can be considered to anticipate the subject-matter of granted claim 1. For the sake of completeness, it is noted that the specification of Lumicene® M4040 is not known. Contrary to appellant 1's view, D10 was only a commercial brochure in which typical characteristics of the polyethylene resin were mentioned.

1.14 Overall, the evidence on file leaves no reasonable doubt that the batches of Lumicene® M4040 available to the public before the priority date anticipated all the features of granted claim 1. Accordingly, the Board concludes that the subject-matter of claim 1 lacks novelty over the public prior use of Lumicene® M4040.

Auxiliary requests 1 and 2

2. Claim 1 of auxiliary requests 1 and 2 being identical to claim 1 as granted, the previous finding of a lack of novelty also applies to these requests.

Auxiliary request 3

3. Claim 1 of auxiliary request 3 differs from claim 1 as granted in that the polyethylene copolymer is characterised by a z-average molecular weight (Mz) of from 125 kg/mol to 260 kg/mol. It was not contested by

the opponents that this additional feature conferred novelty in view of the commercial products Lumicene® M4040 and Lumicene® M2735. The sole objection raised against auxiliary request 3 was an objection of lack of inventive step starting from document D2 as the closest prior art (see rejoinder of the party as of right, page 6, third paragraph to page 8, second paragraph). For the sake of completeness, it is noted that the party as of right also raised an objection of insufficiency of disclosure which only concerned auxiliary requests 12 to 14 but not the higher ranking requests (see letter dated 4 September 2025, page 2, second paragraph).

4. Inventive step over D2

4.1 Closest prior art and distinguishing features

4.1.1 There is agreement between the parties that:

- sample 2 of document D2 can be selected as the closest prior art for the assessment of inventive step;

- the subject-matter of claim 1 of auxiliary request 3 differs from the polymer of sample 2 in that:

  the polymer is a copolymer comprising an alpha olefin comonomer instead of a polyethylene homopolymer.

The Board has no reason to deviate from that view.

4.1.2 What is disputed, however, is whether it can be expected that the SCB content of the polymer of sample 2 of D2 be greater than 0.6 SCB per 1,000 carbon atoms, in other words whether a SCB content of greater than

0.6 SCB per 1,000 carbon atoms constitutes a further distinguishing feature between claim 1 and the closest prior art.

4.1.3 In that respect, the party as of right pointed out that sample 5 of the opposed patent:

was obtained using the same catalyst as sample 2 of D2 and

was characterised by a SCB content of 0.6.

Accordingly, owing to the lower density of sample 2 of D2 compared to sample 5 of the patent, the party as of right contended that the SCB content of sample 2 should be at least 0.6 (rejoinder, page 6, penultimate paragraph to page 7, third paragraph).

4.1.4 In that regard, the Board concurs with appellant 1 (statement of grounds of appeal, page 4, paragraph 3.2). It is undisputed that sample 2 of D2 concerns a polyethylene homopolymer (see D2, paragraph [0093]). Therefore, the relevant question is whether the SCB content of such a homopolymer can be expected to be at least 0.6.

4.1.5 The party as of right relied on sample 5 of the opposed patent as evidence that a polyethylene homopolymer such as sample 2 of D2 should have an SCB content of at least 0.6. Even if sample 5 appears to support this argument, sample 8 does not: it shows that a polyethylene homopolymer with an SCB content below 0.6 can also be obtained using the same catalyst, despite having a lower density than sample 5. The comparison between samples 5 and 8 therefore contradicts the contention that the SCB content must necessarily

increase as density decreases. Contrary to the view of the party as of right, the density of a polyethylene can be influenced by additional factors, including molecular weight. Thus, the relatively low density of sample 2 of D2 is not necessarily attributable primarily to its SCB content. In the absence of clear evidence to the contrary, the Board has no reason to assume that the SCB content of sample 2 of D2 must inevitably be above 0.6.

4.1.6 While appellant 1 mentioned in the statement of grounds of appeal (page 4, paragraph 3.4) that the remaining features of claim 1 should also be fulfilled, it has not been shown that any of these features would constitute distinguishing features compared to sample 2 of D2. Accordingly, the Board comes to the conclusion that the subject-matter of operative claim 1 differs from sample 2 of D2 in that:

> the polymer is a copolymer comprising an alpha olefin comonomer, having a SCB content of greater than 0.6 short chain branches per 1,000 carbon atoms.

4.2 Problem to be solved

4.2.1 Appellant 1 stated that the patent provided evidence that the balance of properties (impact/tear strength, moisture vapour transmission rate (MVTR) and processability) was improved for the copolymers according to present claim 1 compared to the polymer of sample 2 of D2 (statement of grounds of appeal, page 4, point 3.5).

4.2.2 However, this is not convincing. The examples in the patent do not report the mechanical properties of the

films or the processability of the claimed polymer. Furthermore, a direct comparison with the polymer of sample 2 of D2 (or a similar polymer) is lacking. In fact, the Board notes that the MVTR of sample 2 of D2 is even lower than that reported in the examples of the opposed patent, and is in any case within the range specified in claim 1 (see D2, page 24, Table 1).

4.2.3 Therefore, the Board has no reason to depart from the opposition division's view that the objective problem to be solved is the provision of an alternative polymer for preparing films (contested decision, middle of page 18).

4.3 Obviousness

4.3.1 It remains to be evaluated whether it was obvious for a person skilled in the art, wishing to provide an alternative polymer, to modify the polymer of sample 2 of D2 and thereby obtain a polymer as defined in claim 1 of auxiliary request 3.

4.3.2 In agreement with the opposition division, the party as of right stated that D2 suggested using small amounts of comonomer which would lead the skilled person to the subject-matter of operative claim 1 (rejoinder, page 8, first paragraph; contested decision, second half of page 18).

4.3.3 Appellant 1 argued that it was not obvious for a person skilled in the art, starting from sample 2 of D2, to increase the short chain branching (SCB) content while maintaining all other polymer properties because (statement of grounds of appeal, page 4, point 3.7 to page 6, point 3.19):

(a) D2 did not suggest adding sufficient alpha-olefin comonomer to achieve the SCB level required by the claimed invention. D2 primarily focused on homopolymers with comonomer levels below 0.5 wt.%, which were too low to achieve the claimed SCB levels or to even qualify as copolymers under the definition of the patent (see paragraph [0083]);

(b) there was no teaching in D2 on how to modify a polymer to reach the required SCB content while keeping other critical properties — such as ZSV (zero shear viscosity), Mz/Mw, and MVTR — within the narrow ranges of operative claim 1;

(c) adding comonomer to increase SCB would be expected to lower density and increase MVTR, negatively affecting the desired balance of properties. It could also undesirably alter Mz/Mw and ZSV, which were already at the limits in sample 2 of D2;

(d) the necessary combination of catalyst, comonomer content, and reaction conditions to achieve the claimed property balance was not disclosed in D2 so that achieving this required significant experimental effort and amounted to a research project;

(e) D2 taught away from using sufficient comonomer to form a copolymer, suggesting instead minimal comonomer use that would not achieve the claimed SCB. Thus, D2 did not guide the skilled person towards the invention, but rather in a different direction.

4.3.4 For the Board, the central question in the present case is not whether it would have been obvious for the

skilled person to add a comonomer to a polyethylene homopolymer in order to obtain an alternative polymer - particularly one with an increased SCB value (a question the Board would have answered in the affirmative). Rather, the decisive issue is whether the skilled person would, in the first place, have encountered any difficulty in reproducing the polymer of sample 2 of D2, and thus in obtaining a copolymer according to operative claim 1 when attempting to modify the starting polymer.

4.3.5 In the Board's view, the ability to reproduce specifically sample 2 of D2 is prerequisite to be able to provide an alternative thereto in which an amount of comonomer is added during preparation.

4.3.6 As noted by appellant 1, the reaction conditions (such as temperature, pressure, type and quantity of catalyst or co-catalyst and the concentrations of various reactants) for sample 2 of D2 are not disclosed (see D2, paragraph [0093]). In the Board's view, the skilled person wishing to obtain the polymer of sample 2 or a polymer with similar properties would therefore have to conduct a research program in order to identify the experimental conditions allowing to achieve that goal. Already for that reason,the Board does not consider obvious to reproduce sample 2 with the required variations (at least the addition of some comonomer) and to obtain an alternative thereto as defined in operative claim 1.

4.3.7 The party as of right argued that the catalyst used for sample 2 of D2 was identical to the bridged catalyst of formula (16) of the opposed patent (see paragraph [0035]). It was further submitted that the reaction conditions disclosed in paragraphs [0012]-[0025] of D2

did not differ from those of the opposed patent (see paragraphs [0009]-[0022]). On that basis, the party as of right contended that the skilled person would have no difficulty in reproducing sample 2 of D2.

4.3.8 Even if the Board accepts these similarities between D2 and the opposed patent, this does not mean that D2 provides sufficient information enabling the skilled person to reproduce sample 2 without difficulty. Paragraphs [0012]-[0025] of D2 describe a broad set of possible reactor configurations, polymerisation conditions, and reactive and non-reactive species that may be used to prepare the polymers. It is evident to the Board that selecting arbitrary combinations of these conditions will not necessarily yield the polymer of sample 2, as illustrated by the other examples in D2. The skilled person must instead identify, within a wide range of possible options, the specific conditions that lead to sample 2 - an effort that amounts to an undue burden.

4.4 Under these circumstances, the Board comes to the conclusion that it was not obvious for a skilled person to reproduce sample 2 of D2 and modify it so as to arrive at a copolymer according to claim 1 of auxiliary request 2. The subject-matter of claim 1 of auxiliary request 3 therefore involves an inventive step starting from sample 2 of D2 as the closest prior art.

5. As the sole objection against the claims of auxiliary request 3 is unsuccessful, the patent is to be maintained on the basis of that request.

6. Admissibility of the appeal of appellants 2

6.1 Appellant 1 requested that the appeal of appellants 2 be rejected as inadmissible (rejoinder of appellant 1, page 1, points 1.1 to 1.6). The Board did not have to take a decision on that issue for the following reasons:

6.2 The opposed patent was maintained by the opposition division on the basis of auxiliary request 11 corresponding to auxiliary request 11 in appeal. The admissibility of the appeal of appellants 2 (as opponents) would only have been relevant if the Board had had to decide on the allowability of that request, or of a lower-ranking request. However, the Board concluded that the opposed patent could be maintained on the basis of auxiliary request 3, meaning that the admissibility of appellants 2's appeal did not need to be considered.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the claims of auxiliary request 3 filed with the statement of grounds of appeal of appellant 1 after adaptation of the description if necessary.

The Registrar: The Chairman:

D. Hampe D. Semino

Decision electronically authenticated