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**Datasheet for the decision
of 30 September 2025**

Case Number: T 2020/23 - 3.3.03

Application Number: 16879419.6

Publication Number: 3241854

IPC: C08F210/02, C08F210/16,
C08F4/6592

Language of the proceedings: EN

Title of invention:

LOW DENSITY POLYETHYLENE COPOLYMER EXCELLENT IN FILM
PROCESSABILITY AND TRANSPARENCY

Patent Proprietor:

LG Chem, Ltd.

Opponents:

Borealis GmbH
The Dow Chemical Company

Relevant legal provisions:

RPBA 2020 Art. 12(4), 13(2)
EPC R. 139
EPC Art. 83

Keyword:

Amendment to case - evidence - amendment admitted (yes)
Amendment after summons - exceptional circumstances (no)
Correction of error - (no)
Sufficiency of disclosure - undue burden (yes)

Decisions cited:

G 0001/12, T 1207/21



Beschwerdekammern

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Case Number: T 2020/23 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 30 September 2025

Appellant:
(Patent Proprietor)

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted on 24 October 2023
revoking European patent No. 3241854 pursuant to
Article 101(3)(b) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. The appeal lies against the decision of the opposition division revoking European Patent No. 3 241 854. This decision was based on the amended claims of a main request and of auxiliary requests 1 to 7, all filed with letter dated 12 July 2023.

II. Claim 1 of the main request read as follows:

"A low density polyethylene copolymer which satisfies the following conditions:

a melt index (MI) of 0.5 to 1.5 g/10 min as measured according to ASTM D1238 (2.16 kg, 190°C),

a density 0.910 to 0.930 g/cm³ as measured according to ASTM D792,

a weight average molecular weight of 91,000 to 150,000,

a melt strength (MS) of 70 to 100 mN at 190°C wherein melt strength is determined as follows:

the molten low density polyethylene copolymer is filled in a rheometer equipped with a capillary having an aspect ratio of 15 that is 30 mm in length and 2 mm in diameter and then applied to a shear rate of 72/s to prepare a strand; the melt strength is determined by measuring the force (mN) at the time of breakage while uniaxially stretching the strand with an

accelerating wheel at an initial speed of 18 mm/s and an acceleration of 12 mm/s²; and

wherein the low density polyethylene copolymer has η_0 (zero shear viscosity) of 14000 Pa·s (140,000 poise) or more, and η_{500} (viscosity measured at 500 rad/s) of 700 Pa·s (7,000 poise) or less."

The exact wording of claim 1 of auxiliary requests 1 to 7 is not relevant to the present decision. It is merely pointed out that claim 1 of these requests was limited by the melt strength feature as defined above.

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

D23: Declaration in relation the opposed patent by Ryan Hall, dated 13 January 2022

D24: Anka Bernnat, "Polymer Melt Rheology and the Rheotens Test", Institut für Kunststofftechnologie, Universität Stuttgart, 2001

D25: R. K. Gupta *et al.*, "The Effect of Die Geometries and Extrusion Rates on Melt Strength of High Melt Strength Polypropylene", Journal of Polymer Engineering, Vol 27, No. 2, 2007, pages 89 to 105

D29: Declaration by Mahdi Abbasi, dated 5 June 2023

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

- The invention was not sufficiently disclosed for it to be carried out by the person skilled in the art over the whole scope of claim 1 of the main request. The same conclusion applied to auxiliary requests 1 to 7.

V. An appeal was filed by the patent proprietor (appellant). With its statement of grounds of appeal, the appellant submitted the following documents:

D46: Declaration (including an experimental report) by Seok Bin Hong, dated 28 February 2024

D47: Brochure concerning a Göttert Rheometer

VI. Opponents 1 and 2 (respectively respondents 1 and 2) filed a rejoinder to the statement of grounds of appeal.

With their rejoinder, respondent 1 filed the following documents:

D48: EP 3 411 428 B1

D49: WO 2014 181991 A1

D50: KR 10-2014-0132667

D50a: Machine translation of KR 10-2014-0132667

D51: EP 3 489 287 B1

D52: EP 2 489 686 B1

D53: EP 4 083 089 A1

D54: EP 4 316 763 A1

VII. The parties were summoned to oral proceedings and a communication pursuant to Article 15(1) RPBA indicating specific issues to be discussed at the oral proceedings was then sent to the parties.

VIII. With letter dated 12 August 2025, the appellant requested a correction of document D46 and filed the following documents:

D46a: Corrected version of D46, dated 12 August 2025

D46b: Declaration by Seok Bin Hong, dated
12 August 2025

D55: Product Description RHEOTENS 71.97

D56: WO 2011/043944 A2

D57: WO 2008/113680 A1

D58: EP 2 004 706 B1

D59: EP 1 546 254 B1

D60: US 7,345,113 B2

D61: M.H. Wagner *et al.*, "Rheotens-mastercurves and
elongational viscosity of polymer melts", *Rheol.
Acta*, 1996, 35, pages 117 to 126

IX. Oral proceedings were held before the Board on
30 September 2025. At the end of the oral proceedings,
the parties' final requests 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 main request or one of auxiliary
requests 1 to 7 all filed with letter dated 12 July
2023.

Respondent 1 requested that the appeal be
dismissed.

Respondent 2 requested that the appeal be
dismissed, or, should the Board find that the
claimed invention was sufficiently disclosed and
met the requirements of Article 123(2) EPC, that
the case be remitted to the opposition division.

X. The appellant's requests corresponded to the requests
dealt with in the decision under appeal (reference is
made to point II. for the wording of claim 1).

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

- the admittance of documents D46 to D54 (point 1.1 and 1.2 of the reasons) and D56 to D61 (point 1.3 of the reasons);
- the correction of document D46 (point 2. of the reasons) and
- the requirements of sufficiency of disclosure (points 3. and 4. of the reasons).

Reasons for the Decision

1. Admittance of late-filed submissions
 - 1.1 Documents D46 and D47
 - 1.1.1 D46 and D47 are new items of evidence filed by the appellant with the statement of grounds of appeal. Their admission to the proceedings, which is contested by the respondents, is subject to the discretionary power of the Board in accordance with Article 12 paragraphs (4) to (6) RPBA.
 - 1.1.2 D46 is directed to establishing that the melt strength (MS) of low density polyethylene copolymers is not significantly affected by the spinline length during measurement (statement of grounds of appeal, page 8, second paragraph). In addition, D47 would show that a spinline length of 100 mm was typically used in commercial rheometers. These documents were filed in reaction to document D29 which was submitted shortly before the oral proceedings in opposition and considered relevant in the contested decision (statement of grounds of appeal, page 8, first paragraph).
 - 1.1.3 The admittance of D46 and D47 is contested by the respondents for the following reasons (rejoinder of respondent 1, page 7, last full paragraph to page 8, last paragraph; rejoinder of respondent 2, page 2 to page 4, first paragraph):

- the lack of information with regard to the spinline length was pointed out by opponent 2 in their notice of opposition (page 7, paragraph 53) with reference to D24 (corresponding to D11 in the notice). D46 and D47 should have been filed during opposition proceedings in reaction to that objection;
- experimental report D29 was filed by opponent 1 three months before the oral proceedings. D46 could and should also have been filed during opposition proceedings in response to D29;
- the spinline lengths reported in D46 (5 mm, 10 mm and 20 mm) were significantly shorter than the values in D24 (50 and 100 mm), D29 (100, 150 and 200 mm) or even the alleged standard length of 100 mm given in D47. D46 was therefore not *prima facie* relevant;
- D47 could not be considered to provide a generic teaching of common general knowledge and was therefore not *prima facie* relevant.

1.1.4 The Board notes that the effect of the spinline length on MS was one of the key arguments for the finding that the claimed invention was insufficiently disclosed (contested decision, points 20.4.3 to 20.5 of the Reasons). In that regard, document D29 provided evidence that the spinline length had significant influence on the MS values (contested decision, page 9, second full paragraph).

While it is true that the issue of the spinline length was initially discussed in the notice of opposition of opponent 2 (page 7, paragraph 53), it is not apparent

to the Board that this initial objection was detailed. Nor does it appear that this initial objection was able to convince the opposition division, as indicated in its preliminary opinion (page 3, point 3.3.3). Consequently, there was no reason for the patent proprietor to file D46 or D47 in reaction to the notices of opposition or the preliminary opinion of the opposition division.

- 1.1.5 Rather, in the Board's view, it was experimental report D29 filed only three months before the oral proceedings that provided substantial evidence and convinced the opposition division that the spinline length had a relevant impact on MS values. In that respect, the Board does not consider that the time between the submission of D29 and the oral proceedings was sufficient to require from the patent proprietor to react to it by filing further (experimental) evidence.
- 1.1.6 As to the suitability of D46 and D47 to address the issues that led to the decision under appeal, it is noted that both documents relate to the determination of MS and the spinline length in that context (D46, table; D47, page 7, left column, third paragraph). The Board therefore finds that they are *prima facie* relevant. Whether this evidence is persuasive (which is disputed by the respondents), is not part of the *prima facie* assessment, but should be addressed (if necessary) once D46 and D47 are in the proceedings.
- 1.1.7 Under these circumstances, the Board finds it appropriate to exercise its discretion under Article 12(4) RPBA by admitting documents D46 and D47 into the proceedings.

1.2 Documents D48 to D54

1.2.1 D48 to D54 are new documents filed by respondent 1 with their rejoinder to the statement of grounds of appeal. Their admission to the proceedings is also subject to the discretionary power of the Board in accordance with Article 12 paragraphs (4) to (6) RPBA.

1.2.2 D48 to D54 are directed to establishing that different spinline lengths can be used in the present technical field (rejoinder of respondent 1, page 6, first full paragraph). According to respondent 1, these documents were filed in reaction to document D47.

1.2.3 The admittance of D48 to D54 is contested by the appellant for the following reasons (letter dated 16 December 2024, page 1, last paragraph):

- no credible reason was provided as to why the factual situation had changed such that it would warrant the late-filing of these documents;
- D48 to D54 did not support the assertions made by respondent 1.

1.2.4 As noted previously (see point 1.1.2), D47 was submitted by the appellant to show that a spinline length of 100 mm was typically used in commercial rheometers. D48 to D54 directly address that alleged fact by providing evidence that other spinline lengths could be used (see D48, page 7, paragraph [0047]; D49, page 16, lines 12 to 15; D50, page 10, paragraph [0069]; D51, page 9, lines 55 to 57; D52, page 9, paragraph [0073]; D53, page 10, paragraph [0072]; D54, page 10, paragraph [0064]). In view of the fact that D47 was submitted with the statement of grounds of

appeal, the Board considers that D48 to D54 were filed by respondent 1 at the first opportunity, namely with their rejoinder.

- 1.2.5 Under these circumstances, the Board finds it appropriate to exercise its discretion under Article 12(4) RPBA by admitting documents D48 to D54 into the proceedings.
- 1.3 Documents D56 to D61
 - 1.3.1 D56 to D61 are new items of evidence filed by the appellant with the letter dated 12 August 2025 and therefore after notification of the Board's communication under Article 15(1) RPBA. Their admission to the proceedings, which is contested by the respondents, is subject to the discretionary power of the Board in accordance with Article 13(2) RPBA which provides that amendments to a party's case are not to be taken into account unless exceptional circumstances, justified by cogent reasons, exist.
 - 1.3.2 According to the appellant, documents D56 to D61 were filed as evidence of common general knowledge, in particular to show that the spinline length for the MS measurement was typically 10 cm (letter dated 12 August 2025, page 2, second full paragraph). However, no exceptional circumstances for their admittance were put forward (minutes of the oral proceedings before the Board, page 2, sixth paragraph).
 - 1.3.3 As noted previously (see points 1.1.2 and 1.2.2), the question of the spinline length used for the measurement of MS was a central point of dispute between the parties. D47 (from the appellant) and D46 to D54 (from respondent 1) were filed for that purpose

from the onset of the appeal proceedings. Therefore, the Board fails to see why D56 to D61 which address the same issue could not have been filed at an earlier stage of the appeal proceedings.

1.3.4 In any event, even if it could have been accepted that D56 to D61 be filed in response to D46 to D54 (filed on 3 July 2024), the filing of these documents over an year after the filing of D46 to D54 and well after the Board's communication under Article 15(1) RPBA (dated 24 March 2025) is not justified, especially since no exceptional circumstances were provided.

1.3.5 Accordingly, documents D56 to D61 are not taken into account (Article 13(2) RPBA).

2. Correction of document D46

2.1 With letter dated 12 August 2025 (see point 1 on pages 1 and 2), the appellant argued that the units "mm" in document D46 were a typographical error and were meant to be "cm". The actual spinline lengths used in the experiments described in D46 were therefore 5 cm, 10 cm, and 20 cm. To correct this, the appellant filed:

a corrected version of D46 (D46a) with the proper units, and

a declaration by Mr. Hong (D46b) confirming that the original D46 contained an obvious error and explaining why "cm" was clearly intended, supported by reference to the RHEOTENS 71.97 product description (D55).

Based on the corrected data, the appellant submitted that a spinline length in the tested range (5–20 cm)

had no significant influence on the measurement of melt strength for low-density polyethylene copolymers within normal experimental error. Therefore, any omission of spinline length in the measurement method of the patent in suit did not influence the results, and the invention remained sufficiently disclosed.

During the oral proceedings before the Board, the appellant further argued that a correction under Rule 139 EPC can be made at any time. It was furthermore clear for a skilled person that an error was initially present in document D46, since it was not possible to measure MS with a spinline length of only 5 mm. The correction only reflected what would have been understood by a skilled reader.

2.2 The respondents opposed the appellant's request to correct document D46 under Rule 139 EPC, arguing that several criteria established in decision G 1/12 (point 37 of the reasons) were not met (letter of respondent 2 dated 22 August 2025, point 1 on pages 1 to 3; letter of respondent 1 dated 12 September 2025, point 2 on page 2).

- Burden of proof (criterion b): the alleged error in the unit used in D46 (from "mm" to "cm") was not immediately apparent. The unit "mm" appeared consistently in three different parts of D46 (the introduction, table, and diagram) showing it was not a single mistake. The appellant's only support was a reference in declaration D46b to a rheometer description (D55), but as D46 itself did not identify that rheometer, there was no direct link between the documents. Furthermore, there was no reason to assume that "cm" was the only possible correction for "mm". Thus, the appellant failed to

meet the heavy burden of proof required to show what was "originally intended".

- Filing without delay (criterion d): the corrected version (D46a) was filed 18 months after the statement of grounds of appeal and over 13 months after the respondent had first raised the issue of differing spinline lengths. The correction was also filed four months after the Board's preliminary opinion. As no justification for this delay was provided, the correction could not be considered timely.

Therefore respondent 2 requested that the correction to D46 not be admitted. Should it be admitted, they requested additional time to prepare a technical rebuttal supported by evidence.

2.3 In G 1/12 (point 37 of the reasons), the Enlarged Board of Appeal recalled that the following principles had been established by the Boards, in particular the legal Board of Appeal, to assess whether the correction of errors under the first sentence of Rule 139 EPC was allowable:

"(a) The correction must introduce what was originally intended. For example, an applicant wishing to add a designation not originally intended on filing cannot rely on the first sentence of Rule 88 EPC 1973 (J 8/80, OJ EPO 1980, 293, in particular Reasons No. 7). The possibility of correction cannot be used to enable a person to give effect to a change of mind or development of plans (J 8/80, loc. cit., Reasons No. 6; J 6/91, OJ EPO 1994, 349). It is the party's actual rather than ostensible intention which must be considered.

(b) Where the original intention is not immediately apparent, the requester bears the burden of proof, which must be a heavy one (J 8/80, loc.cit., Reasons No. 6).

(c) The error to be remedied may be an incorrect statement or an omission.

(d) The request for correction must be filed without delay."

2.4 In the present case, the Board considers that at least the last of these principles (filing without delay) is infringed by the correction request of the appellant. The reasons are as follows:

2.4.1 Document D46 was filed by the appellant with the statement of grounds of appeal (on 29 February 2024). The spinline lengths reported in that document were 2 mm, 5 mm and 10 mm. In their rejoinder dated 2 July 2024 (page 8, sixth to eighth paragraphs), respondent 2 pointed out that the spinline lengths in D46 were far from those disclosed in the prior art and in D47. This point was later addressed by the Board in its communication of 24 March 2025 (page 17, paragraph (e)). It was, however, only with the letter dated 12 August 2025 that the appellant requested a correction of D46 replacing the units "mm" by "cm". In the Board's view, the request for correction should have been filed as soon as the appellant became aware of the presence of an error which means at the latest in direct response to the initial criticism of respondent 2 (i.e. shortly after 29 February 2024). However, filing that correction on 12 August 2025 - 13 months after the rejoinder of respondent 2 - does not

comply with the criterion that a correction request be filed "without delay" (G 1/12, point 37 of the reasons; T 1207/21, point 3 of the reasons).

- 2.4.2 This is in the Board's view particularly important since an allowable correction under Rule 139 EPC would have a retrospective effect such that the opponents' arguments based on D46 before correction would become moot and the parties and the Board would effectively be faced with a new factual situation shortly before the oral proceedings. In addition, the Board would possibly have to postpone the oral proceedings as requested by respondent 2 which would be contrary to procedural economy.
- 2.5 The appellant argued that the skilled reader would have immediately understood that the unit "mm" was incorrect and that the only possible correction was "cm". In that case, the Board understands from the appellant's submission that a skilled person reading D46 for the first time would have immediately identified the error and applied the suggested correction. Hence, a correction of D46 would not be necessary and in any event the corrected version of D46 could not be seen as an amendment of the appellant's case.
- 2.6 This is also not convincing. First, as observed by respondent 2 (letter of 22 August 2025, point (b), page 2), D46 does not disclose the specific type of GÖTTFERT rheometer used. In the absence of such information, it is doubtful that a skilled reader would have recognised that the spinline lengths reported in D46 were erroneous. Second, as respondent 1 pointed out (letter of 12 September 2025, point 2, page 2), the appellant's proposed correction is not the only conceivable one. A length could, in principle, be expressed in various

possible (SI or non-SI) units so that even if a skilled reader had suspected an error, it is not convincing that the only possible correction was to replace "mm" by "cm".

- 2.7 In view of the above, the appellant's request for correction of D46 under Rule 139 EPC is refused. For the sake of completeness, it is noted that there was no separate request from the appellant to admit D46a, D46b and D55 into the proceedings (minutes of the oral proceedings, page 2, penultimate paragraph).

Main request (as filed with letter dated 12 July 2023)

3. Sufficiency of disclosure
- 3.1 In the present case, the critical issue was whether the opposed patent contained sufficient information to enable a skilled person to produce any low-density copolymer according to operative claim 1 without facing an undue burden. Specifically, the central point of dispute between the parties was whether a skilled person would encounter any difficulties when preparing a copolymer exhibiting a melt strength (MS) of 70-100 mN, as defined in claim 1.
- 3.2 In the decision under appeal, the opposition division found that the invention was not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art over the whole scope of claim 1 (points 20.1 to 20.5 of the Reasons). The reasoning of the opposition division, supported by the respondents in appeal, can be summarised as follows:

- The method for measuring MS was not sufficiently disclosed. The patent described some test conditions, but it left out key parameters like the spacing between the Rheotens wheels, the die entrance angle and the spinline length. These parameters had a significant impact on the MS values. In particular, experimental data (D23, D25 and D29) showed that small changes in the parameters caused large variations in MS results, sometimes shifting them inside or outside the range defined in claim 1 of the main request.

- Since the patent omitted measurement details, the claims had to be interpreted broadly to cover all reasonable measurement methods. This broadening of the claim scope made it more difficult to reproduce the invention, as the patent did not explain how to achieve the claimed properties across all possible measurement conditions.

- Although the patent provided examples and comparative data, opponents showed that similar polymers made under nearly identical conditions still failed to meet the MS requirement. The patent did not offer enough experimental guidance on how to adjust synthesis parameters, and the patent proprietor failed to show how the skilled person could fill this gap using common general knowledge.

- While the opposition division considered that, even accepting that the opposed patent taught how to obtain a polymer according to the scope of claim 1 as initially intended, reproducing all polymers within the expanded claim scope would have placed an undue burden on the skilled person. Therefore,

the claimed invention did not meet the requirements of sufficiency of disclosure.

3.3 The appellant contests these findings for two main reasons:

3.3.1 Burden of proof and absence of evidence (statement of grounds of appeal, pages 2 to 4, point 3)

The appellant argued that the burden of proving insufficient disclosure lay with the opponents, who must show that a skilled person, despite reasonable efforts, could not reproduce the invention. The opponents, however, neither attempted to reproduce the examples in the patent nor provided evidence that the invention could not be carried out.

The patent provided detailed process information and examples, giving the skilled person clear guidance on how to adjust the polymer properties. The opposition division's conclusion that the skilled person would face an undue burden in achieving the required MS value was based solely on assertions, not on actual evidence.

The appellant contended that the opposition division wrongly shifted the burden of proof to the patent proprietor, expecting them to prove sufficiency, when it was the opponents' responsibility to prove the opposite.

On this basis, the appellant concluded that the decision to revoke the patent should be set aside because the opposition division misapplied the burden of proof and revoked the patent without concrete evidence that the skilled person would be unable to obtain copolymers within the claimed scope.

3.3.2 Sufficiency of disclosure for the melt strength
(statement of grounds of appeal, pages 4 to 8, point 4)

Rheotens wheel spacing:

The appellant argued that the opposition division made errors in assessing the impact of wheel spacing on melt strength. The experimental report D23 provided by the opponents showed identical melt strength values (69 mN) at 0.2 mm and 0.4 mm spacings, demonstrating reliable and repeatable results. The drop to 64 mN at 0.8 mm spacing was expected, and the skilled person would avoid problematic setups like this one.

Die entrance angle:

The appellant contested the opposition division's reliance on D25, which concerned polypropylene, not the claimed polyethylene copolymers. D25 involved much higher molecular weights than those of the claimed invention, making the comparison invalid. Furthermore, D25 itself concluded that die entrance angle had no significant impact on MS.

Spinline Length:

The opposition division had relied on experimental report D29 to conclude that the spinline length affected MS. The appellant submitted D46 showing that the spinline length had no significant impact on MS when taking into account normal experimental error. They also filed D47, showing that a 100 mm spinline length was standard in commercial rheometers, further supporting their position.

The appellant concluded that the alleged uncertainties in MS measurement were either unsupported by evidence or based on irrelevant data. Therefore the opposition division's findings of insufficient disclosure were unjustified and should be overturned.

- 3.4 According to the established case law, a European patent complies with the requirements of sufficiency of disclosure if the skilled person, on the basis of the information provided in the patent specification and, if necessary, using common general knowledge, is able to carry out the invention as claimed in the whole range claimed without undue burden, i.e. with reasonable effort (Case Law of the Boards of Appeal, 11th edition 2025, in the following "Case Law", II.C. 1). In that respect, a successful objection of insufficient disclosure presupposes that there are serious doubts, substantiated by verifiable facts. The Board furthermore concurs with the appellant that the burden of proof initially lies with the opponents, who must establish that a skilled person reading the patent and using common general knowledge, would be unable to carry out the invention (Case Law, III.G.5.1.2 d)).

Alleged absence of evidence

- 3.5 According to the appellant, the respondents did not provide any proof raising doubts as to the ability of a skilled person to reproduce the claimed invention. In particular, the respondents neither attempted to reproduce the examples in the patent nor provided evidence that the invention could not be carried out. Already for that reason, the objection of the opponents should be dismissed so the appellant.

3.6 In the Board's view the evidence put forward by an opponent in the context of sufficiency of disclosure can take different form and there is no obligation for the opponent to reproduce the examples of the opposed patent. Instead it is only necessary that the evidence is such as to convince the deciding body that the claimed invention is not sufficiently disclosed. In the present case, contrary to the appellant's view, the opponents provided some evidence that the method to measure MS allegedly lacked key parameters allowing to obtain accurate results (D23, D25 and D29). In addition, the opponents used the examples provided in the patent as proof that the skilled person would have difficulties to reproduce the invention, which was considered convincing by the opposition division (contested decision, page 10, antepenultimate paragraph). Therefore, the Board has no reason to consider that the opposition division misapplied the burden of proof and revoked the patent without concrete evidence.

3.7 Whether this evidence and the arguments attached thereto are persuasive is, however, a matter to be assessed in the substantive examination of the sufficiency objection. What matters is whether the totality of the evidence renders it credible that the skilled person, relying on the patent and common general knowledge, would face an undue burden in carrying out the invention across the full scope of the claims.

Concept fit for generalisation

3.8 The question to be answered by the Board is whether the contested patent provides sufficient information to

enable a person skilled in the art to obtain, without undue effort, any composition according to claim 1.

3.9 In that regard, the Board concurs with respondent 1 that reference examples 3 and 4 of the patent (corresponding to examples 3 and 4 of the application as filed) demonstrate that the invention cannot be carried out over the whole claimed range without undue burden (rejoinder of respondent 1, pages 18 to 25, points 4.8 to 4.22). These reference examples were prepared by following the teaching of the patent: they use the same type of catalyst and co-catalyst, the same comonomer (1-hexene), and the same polymerisation conditions as described in paragraphs [0029] to [0047] of the patent. They also meet all structural and rheological parameters required in claim 1 and the dependent claims (MI, density, M_w , η_0 , η_{500} , M_z , MFRR, M_w/M_n), and even the αM range indicating the presence of long-chain branching.

3.10 Despite fulfilling all these requirements, the copolymers of reference examples 3 and 4 are not characterised by the required melt strength, having values which are far away from the range in claim 1 (53 mN and 46 mN instead of at least 70 mN). Since they comply with all preferred embodiments and conditions in the patent, yet fail to deliver the required melt strength, these examples clearly show that following the teaching of the patent a skilled person is not able to reliably produce compositions according to claim 1. In addition, the patent provides no guidance on which process parameters or compositional features must be adjusted to convert such a failure into success, i.e. these unsuccessful polymers obtained by a process according to the teaching of the patent into polymers meeting the claimed melt strength.

- 3.11 It follows that the skilled person wishing to carry out the claimed invention over the whole scope of operative claim 1 can only establish by trial and error whether a particular choice of process conditions, monomers and catalysts as taught in the patent can lead to a copolymer with the required MS. Therefore the opposed patent fails to disclose a technical concept fit for generalisation which would enable the skilled person to reliably achieve the envisaged result without undue burden. In this respect it was not argued by the appellant that such a concept would be present in the patent, nor that the skilled person could rely on its common general knowledge to turn a failure into a success.
- 3.12 For these reasons, the Board comes to the conclusion that the claimed invention is not disclosed in a manner sufficiently clear and complete to be carried out over the whole range of claim 1 without undue burden.
- 3.13 During the oral proceedings, the appellant argued that the respondents had not shown that, starting from examples 1 and 2 of the opposed patent, the skilled person would encounter any difficulty in obtaining further copolymers according to claim 1. In this regard, the Board agrees with the respondents that, by demonstrating that the skilled person is unable to reliably obtain a copolymer according to claim 1 despite following the patent's teaching (see reference examples 3 and 4), the respondents have discharged their burden of proof concerning sufficiency of disclosure. Consequently, contrary to the appellant's view, the burden of proof has shifted to the appellant. However, the appellant has provided no evidence supporting their assertion that, starting from examples

1 and 2 of the opposed patent, the skilled person would have no difficulty in obtaining any copolymer according to whole scope of claim 1. The appellant's line of argument is therefore unsubstantiated and cannot convince the Board.

- 3.14 For the sake of completeness, it is noted that part of the respondents' objection concerned the measurement of MS and the alleged lack of information enabling this property to be measured with sufficient precision. The Board does not consider this point to be decisive in concluding that the disclosure of the claimed invention is insufficient. Indeed, it has been demonstrated above that a person skilled in the art would not have been able to obtain any compositions according to present claim 1 without excessive effort, regardless of the additional difficulties that measuring the MS might have posed.

Auxiliary requests 1 to 7

4. All parties in appeal had no additional and separate arguments on sufficiency of disclosure for auxiliary requests 1 to 7, thereby accepting that any conclusion reached for the main request equally applied to these requests (minutes of the oral proceedings, page 3, second paragraph). The Board has no reason to come to a different conclusion (see point 3. of the decision and the fact that the claims of all auxiliary requests are directed to copolymers characterised by a melt strength (MS) of 70 to 100 mN).

Therefore the claimed invention is also insufficiently disclosed for it to be carried out by the person skilled in the art over the whole scope of claim 1 of each of auxiliary requests 1 to 7.

5. Since, due to lack of sufficiency of disclosure, 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:



D. Hampe

D. Semino

Decision electronically authenticated