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**Datasheet for the decision  
of 11 April 2025**

**Case Number:** T 0806/23 - 3.3.03

**Application Number:** 12863460.7

**Publication Number:** 2798002

**IPC:** C08L23/04, C08L23/06,  
C08L23/08, C08J3/00

**Language of the proceedings:** EN

**Title of invention:**

BIMODAL HIGH-DENSITY POLYETHYLENE RESINS AND COMPOSITIONS WITH  
IMPROVED PROPERTIES AND METHODS OF MAKING AND USING THE SAME

**Patent Proprietor:**

Ineos Olefins & Polymers USA

**Opponent:**

The Dow Chemical Company

**Relevant legal provisions:**

EPC Art. 83, 108

EPC R. 99(2)

RPBA 2020 Art. 12(2)

**Keyword:**

Admissibility of appeal - appeal sufficiently substantiated  
(yes)

Sufficiency of disclosure - undue burden (no)

**Decisions cited:**

T 0682/11, T 1228/12



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**Case Number:** T 0806/23 - 3.3.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.03**  
**of 11 April 2025**

**Appellant:**

(Opponent)

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(Patent Proprietor)

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**Decision under appeal:**

**Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
3 March 2023 concerning maintenance of the  
European Patent No. 2798002 in amended form.**

**Composition of the Board:**

**Chairman**

D. Semino

**Members:**

M. Barrère

A. Bacchin

## Summary of Facts and Submissions

I. The appeal of the opponent lies from the interlocutory decision of the opposition division concerning maintenance of European Patent No. 2 798 002 in amended form on the basis of the claims of the main request filed with letter dated 24 June 2022 and an adapted description.

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

"1. A bimodal high-density polyethylene polymer composition comprising a base resin which has a density of 946 to 951 kg/m<sup>3</sup>, and comprises an ethylene polymer (A) having a density of above 970 kg/m<sup>3</sup> in an amount ranging between 47 and 53% by weight, and an ethylene polymer (B) having a density lower than the density of polymer (A), wherein said composition has a complex viscosity at a shear rate of 0.01 rad/s (190°C) ranging between 220 and 450 kPa.s and a complex viscosity at a shear rate of 100 rad/s (190°C) ranging from 2000 to 2500 Pa.s, which composition has a melt elastic modulus  $G'$  ( $G''=3000$ ) at a reference melt viscous modulus ( $G''$ ) value of  $G''=3000$  Pa ranging from 1650 to 2400 Pa, and when made into a pipe has a resistance to stress cracking of greater than 9,000 h as measured by notch pipe test according to ISO ISO [sic] 13479: 1997."

III. The following document was *inter alia* cited in the decision of the opposition division:

D4: WO 2004/101674 A1

- IV. In that decision the opposition division held, among others, that the main request complied with requirements of sufficiency of disclosure.
- V. The opponent (appellant) filed an appeal against said decision.
- VI. With the rejoinder to the statement of grounds of appeal, the patent proprietor (respondent) filed six sets of claims as the first to sixth auxiliary requests.
- VII. Oral proceedings were held before the Board on 11 April 2025. At the beginning of the oral proceedings the respondent stated that it withdrew the first and second auxiliary requests and promoted the third auxiliary request as the first auxiliary request. During the oral proceedings the respondent also withdrew the main request.

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 that the patent be revoked.
- The respondent requested that the appeal be rejected as inadmissible. Should the appeal be found admissible, the respondent requested that the patent be maintained on the basis of one of the third to sixth auxiliary requests filed with the rejoinder to the statement of grounds of appeal.

- VIII. Claim 1 of the third auxiliary request reads as follows:

"A bimodal high-density polyethylene polymer composition comprising a base resin which has a density ranging from 947 to 951 kg/m<sup>3</sup>, and comprises an ethylene polymer (A) having a density of at least 971 kg/m<sup>3</sup> in an amount ranging from 48 to 52% by weight, and an ethylene polymer (B) having a density of 920 to 930 kg/m<sup>3</sup> in an amount ranging from about 52 to about 48 wt%, wherein said composition has a comonomer content of ranging from about 0.4 - 0.6 mol%, a complex viscosity at a shear rate of 0.01 rad/s (190°C) ranging from 220 to 420 kPa.s, a complex viscosity at a shear rate of 100 rad/s (190°C) ranging from 2100 to 2450 Pa.s, and a melt elastic modulus G' (G''=3000) at a reference melt viscous modulus (G'') value of G'=3000 Pa between 1700 and 2200 Pa, which when made into a pipe has a resistance to stress cracking of greater than 9,000 h as measured by notch pipe test according to ISO ISO [sic] 13479: 1997."

The remaining claims of this request as well as the claims of the fourth to sixth auxiliary requests are not relevant to the present decision and are therefore not reflected here.

- IX. The parties' submissions, in so far as they are pertinent to the present decision, may be derived from the reasons for the decision below. They concerned the admissibility of the appeal and the requirements of sufficiency of disclosure.

## **Reasons for the Decision**

1. Admissibility of the appeal
  - 1.1 According to the respondent, the appeal was inadmissible because the appellant merely reiterated arguments previously presented to the opposition division, failing to provide sufficient reasoning for overturning the contested decision (rejoinder, page 2, second full paragraph).
  - 1.2 The appellant argued that their grounds of appeal were detailed and explicitly stated why they considered the contested decision to be flawed. They referred to specific paragraphs within their appeal (statement of grounds of appeal, points 3.1, 3.3, 3.4, 3.11, 3.14, 4.1, 4.20, 5.6, 5.13, 5.26 and 5.29) to demonstrate the comprehensiveness of their reasoning for challenging the opposition division's findings, including those relating to sufficiency of disclosure (letter dated 8 February 2024, page 2, first full paragraph).
  - 1.3 The primary purpose of the appeal is a review of the appealed decision in a judicial manner (Article 12(2) RPBA). Article 108 in conjunction with Rule 99(2) EPC provides that with the statement of grounds of appeal the appellant must indicate the reasons for setting aside the decision impugned, or the extent to which it is to be amended, and the facts and evidence on which the appeal is based. This requires in practice that the statement setting out the grounds be such that the Board and the other party(-ies) can understand without their own investigations why the first instance

decision is allegedly incorrect (Case Law of the Boards of Appeal, 10<sup>th</sup> edition 2022, in the following "Case Law", V.A.2.6.1 and V.A.2.6.3 d)).

1.4 In the present case, the opposition division came to the conclusion that none of the objections raised by the then opponent prejudiced maintenance of the opposed patent on the basis of the main request. To establish the admissibility of an appeal by the opponent, it is sufficient for the appellant to substantiate a challenge to at least one aspect of the impugned decision (Rule 99(2) EPC and Case Law, V.A.2.6.3 d); see e.g. T 682/11, point 1 of the reasons). Whether other aspects addressed in the impugned decision are insufficiently substantiated in the statement of grounds is immaterial and rather pertains to either the admissibility of individual objections or to their allowability. In essence, the appeal's admissibility requires that the Board can comprehend why at least one substantial aspect of the decision is allegedly erroneous.

1.5 On appeal, the appellant contested, *inter alia*, the opposition division's findings under Article 83 EPC. In point 4.1 of their statement of grounds of appeal, they clearly identified which aspect of the opposition division's decision was being challenged. Subsequently, under point 4.20, they presented one of their reasons why the opposition division's conclusion was incorrect, arguing that different standards had been applied to the assessment of Articles 56 and 83 EPC.

These statements among others enable the Board to understand the appellant's basis for contending that this aspect of the decision should be set aside. Moreover, the Board notes that the appellant's



submissions do not merely repeat their arguments from the opposition proceedings as they clearly addressed an alleged inconsistency in the decision under appeal.

- 1.6 In view of this, the Board concludes that the appeal is sufficiently substantiated and therefore admissible (Rule 99(2) EPC).

### **Third auxiliary request**

2. The sole objection maintained by the appellant against the claims of the third auxiliary request concerned the requirements of sufficiency of disclosure (minutes of the oral proceedings, page 3, third and fourth paragraphs).

- 2.1 In the decision under appeal, the opposition division found that the then main request (corresponding to the patent as upheld by the opposition division) fulfilled the requirements of Article 83 EPC (contested decision, page 8, point 6.3). It was considered that no evidence had been provided to rebut this conclusion by showing that the invention could not be carried out over the whole claimed scope without undue burden.

- 2.2 The appellant contests these findings in the context of the third auxiliary request, where the same arguments apply as those presented for the main request (statement of grounds of appeal, page 11, point 4.1 to page 19, first paragraph; letter dated 8 February 2024, page 4, second paragraph to page 6, first paragraph). Their line of argument can be summarised as follows:

- 2.2.1 The patent failed to meet the requirements of sufficiency of disclosure, since there was an undue burden on the skilled person to obtain bimodal high-

density polyethylene (HDPE) compositions that met all the claimed properties (e.g., density, viscosity at low and high shear, melt modulus) and achieve the required Notch Pipe Test (NPT) performance ( $> 9,000$  h) across the entire scope of claim 1. Only one example of a base resin led to a composition according to claim 1 of the third auxiliary request, which was not a sufficient basis to cover the entire scope of the claim. The presumption that the patent was sufficiently disclosed was therefore weak and the skilled person had to conduct a research program in order to obtain any composition as set out in the claims.

- 2.2.2 The examples contained several inconsistencies. Examples 2, 3, and 4 showed no improvement in NPT performance compared to comparative example 1, while example 2 allegedly met the NPT requirement despite failing to fulfil the complex viscosity at  $0.01$  rad/s. In addition, the examples of the patent merely referred to EP-B-2021385 with regard to the catalyst without specifying catalyst concentration, co-catalyst details, or process conditions.
- 2.2.3 Moreover the presence of peroxide in the composition was an essential feature of the invention necessary for achieving the claimed rheological properties through reticulation, yet entirely absent from claim 1. Therefore, the scope of the claims encompassed compositions without peroxide for which the patent did not provide any guidance.
- 2.2.4 It was furthermore unclear whether the NPT property was an additional technical feature or an inherent result, and which specific polymer properties directly influenced this property. The opposition division erred in its assumption that simply fulfilling the

compositional features guaranteed meeting the NPT requirement (contested decision, page 8, point 6.3). In that respect reference was made to decision T 1228/12 (points 2.1 and 2.4 of the reasons), which found a product claim insufficiently disclosed due to a lack of guidance on the interplay between composition features and end-use properties. The same reasoning applied to the opposed patent which failed to demonstrate how controlling the polymer properties reliably led to the required NPT performance.

2.2.5 Finally, the patent proprietor could not argue on the one hand that the skilled person would have no difficulty obtaining a composition satisfying all the features of claim 1, but on the other hand that small differences in the split ratio were not obvious in the context of inventive step in the sense that they would unduly affect rheological properties (reference was made to D4 in this context). The same standard should be applied when assessing the skilled person's level of knowledge under both Article 56 EPC and Article 83 EPC.

2.3 The respondent agreed with the opposition division that there was no verifiable evidence provided by the appellant to prove that the invention could not be carried out across its entire claimed scope without undue burden. Specifically, the appellant failed to show that a composition meeting the specified features would not fulfil the required NPT standard of at least 9000 hours.

Furthermore, the claimed features were defined by precise numerical ranges, making the scope of the claims narrow, and the examples showed that the NPT feature was attainable without excessive effort. Given that sufficient guidance was provided on process

conditions and catalyst nature, the requirements of sufficiency of disclosure were met (rejoinder, page 3, penultimate paragraph to page 4, first paragraph).

2.4 The Board concurs with the respondent for the following reasons:

2.4.1 In opposition and opposition-appeal proceedings, each of the parties carries the legal burden of proof for the asserted allegations of facts on which their respective substantive case rests.

2.4.2 As regards sufficiency of disclosure, an invention has to be disclosed in a manner sufficiently clear and complete for it to be carried out by the skilled person, without undue burden, on the basis of the information provided in the patent specification, if needed in combination with the skilled person's common general knowledge.

2.4.3 In that respect, according to established case law of the Boards of appeal, a successful objection of insufficient disclosure presupposes that there are serious doubts, substantiated by verifiable facts. In *inter partes* proceedings, the burden of proof initially lies with the opponent, who must establish, on the balance of probabilities, that a skilled person reading the patent, using common general knowledge, would be unable to carry out the invention (Case Law, II.C.9.1). The weight of the submissions required for a successful objection of insufficient disclosure is commensurate with the teaching provided in the patent in suit. This implies that whether the appellant's arguments in relation to sufficiency of disclosure in the present case are no more than assertions without any firm basis (as alleged by the respondent) depends on the teaching

provided in the patent in suit and the relevant common general knowledge.

2.4.4 In the present case, the board is satisfied that the patent provides sufficient teaching for the skilled person to prepare a polymer composition according to claim 1. The appellant did not provide any direct evidence that a skilled person trying to reproduce the examples of the opposed patent or following the general teaching of the description would have any difficulty in obtaining a composition according to operative claim 1. While the Board does not dispute that there may be some grey areas *inter alia* with regard to the exact nature of the catalyst used in the examples, it has not been shown that a skilled person would be prevented from reproducing the examples. Specifically, the opposed patent teaches that "catalysts were used as described in EP B-2021385" (page 11, lines 2 and 3) and the appellant did not show that, using any of these catalysts, a composition according to claim 1 could not be obtained. In addition, the respondent had stated during the opposition proceedings that the catalyst in Example 1 of EP-B-2021385 had been used, which has not been refuted. The same reasoning applies to other alleged missing information concerning the preparation of the examples. In other words, it has not been shown or made credible that the alleged missing details were critical for the preparation of compositions according to claim 1 and that the skilled person would not know on the basis of common general knowledge how to fill the gap.

2.4.5 The appellant argued that the presumption that the invention was sufficiently disclosed was weak, justifying to shift the burden of proof to the patent proprietor. However, the Board cannot agree with this

view. As previously noted, the opposed patent describes at least one example of a base resin that leads to compositions as defined in claim 1, even if some uncritical details are admittedly missing. The general description provides further instructions for obtaining said compositions (see paragraphs [0019] to [0056]). Based on the balance of probabilities, with no verifiable fact from the appellant on the one hand and some instructions provided in the opposed patent on the other hand, the Board finds that the claimed invention is sufficiently disclosed to be carried out over the whole scope of claim 1. In any event, the Board sees no reason which would justify to shift the burden of proof to the patent proprietor in that situation.

2.4.6 The same considerations apply to the alleged fact that the skilled person would not know how to obtain compositions according to operative claim 1 without using peroxide. In the absence of direct evidence that the general teaching of the patent would not allow the skilled person to overcome any potential difficulty, the Board cannot find a lack of sufficiency on that basis. Moreover, this feature relates to the method of production of the composition and the Board does not see why process features should be included in the claim as long as the product as claimed can be produced (with peroxide) within the whole scope of claim 1.

2.4.7 As to the relation between the NPT property (which should be at least 9,000 hours) and the other parameters of claim 1, the Board is not convinced that it plays a direct role in the assessment of sufficiency of disclosure. The relevant question is, in the Board's view, whether the skilled person has sufficient information to obtain any composition as defined in claim 1 without undue burden. Whether the NPT is linked

or not to the other parameters is not directly relevant and cannot change the assessment of sufficiency of disclosure. This point is rather an issue to be discussed in the context of the prior art under novelty or inventive step.

- 2.4.8 In the decision cited by the appellant, T 1228/12, the relevant Board found that neither the patent nor any documents or common general knowledge provided the required teaching for the skilled person to prepare the claimed composition. The Board considered that, under the specific circumstances of this case, the fact that the patent did not explain the interaction between the compositional features of a claim and the resulting properties of the composition resulted in lack of sufficiency (point 2.4 of the reasons). The present Board does not consider that these particular circumstances justify introducing an additional criterion for assessing the sufficiency of disclosure, in addition to those of the established general approach (see Case Law, II.C.6.). Furthermore, that decision appears to have considered a hypothetical embodiment meeting some, but not all, features of a claim and examined whether the skilled person would identify the necessary measures to modify that embodiment to obtain a composition satisfying all features of that claim (point 2.7 of the reasons). In the Board's view, while such considerations might have been appropriate under the specific circumstances of this case, there is no basis for their generalisation which would require from the patent proprietor to demonstrate that each feature of the claims can be modified selectively by a person skilled in the art. The generalisation of this approach would actually conflict with established case law, which provides that, in case the patent provides some information

enabling the skilled person to perform the invention, the burden of proof for alleged insufficiency of disclosure initially lies with the opponent (Case Law, III.G.5.1.2 c)). For these reasons, the Board does not consider that the findings of T 1228/12 should be applied to the present case.

- 2.4.9 In the context of inventive step over document D4 (an objection which does not need to be dealt with in the present decision, since it was not pursued by the appellant for the third auxiliary request, see point 2. above), the appellant stated that

*"The Proprietor cannot argue on the one hand that the skilled person would have no difficulty obtaining a composition satisfying all of the features of claim 1 and no difficulty satisfying the NPT requirement, but on the other hand that small differences in the LMW:HMW split are not obvious to the skilled person in the sense that they might unduly affect rheological properties. The same standard must be applied when assessing the skilled person's level of knowledge under both Article 56 EPC and Article 83 EPC"* (statement of grounds of appeal, page 22, first paragraph)

- 2.4.10 The Board agrees with the appellant in so far as the the person skilled in the art has the same level of skill when the two questions of sufficient disclosure and inventive step have to be considered (Case Law, I.D.8.3). However, the issue of inventive step is assessed without the knowledge of the patent, contrary to the issue of sufficiency of disclosure. Hence, it does not necessarily infringe that definition of the skilled person to consider that a specific modification was not obvious based on the prior art alone but would



not have posed any difficulty on the basis of the teaching in the opposed patent. The Board, however, refrains from assessing whether the argument put forward by the respondent under inventive step are reasonable as this issue did not have to be decided for the third auxiliary request.

- 2.5 In these circumstances, in the absence of direct evidence to support the objection of insufficient disclosure, the Board has no reason to depart from the conclusion of the opposition division that the claimed invention is disclosed in a manner sufficiently clear and complete for it to be carried over the whole scope of the claims.
3. Since the sole objection put forward by the appellant in respect of the third auxiliary request is not successful, the Board has no further issue to decide upon and the patent is to be maintained in amended form on the basis of the claims of the said auxiliary request.

## 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 the third auxiliary request filed with the reply to the statements of grounds of appeal after any necessary consequential amendments of the description.

The Registrar:

The Chairman:



D. Hampe

D. Semino

Decision electronically authenticated