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**Datasheet for the decision
of 5 June 2018**

Case Number: T 2148/14 - 3.3.03
Application Number: 06724350.1
Publication Number: 1874830
IPC: C08F110/02, C08F210/16,
C08F10/00, C08L23/06,
C08L23/08, C08F10/02, C08J5/18
Language of the proceedings: EN

Title of invention:

MOLDING COMPOSITION COMPRISING POLYETHYLENE FOR PREPARING
FILMS AND PROCESS FOR PREPARING THE MOLDING COMPOSITION IN THE
PRESENCE OF A MIXED CATALYST

Patent Proprietor:

Basell Polyolefine GmbH

Opponent:

THE DOW CHEMICAL COMPANY

Headword:

Relevant legal provisions:

EPC Art. 54, 56
RPBA Art. 12(1), 12(2), 13(1), 13(3)

Keyword:

Novelty - (yes)- main request

Inventive step - (no) (main request)

Late-filed argument - not admitted - adjournment of oral proceedings would have been required (yes)

Auxiliary requests 1,2 and 3-7 admitted - (no) - no explanation or substantiation given

Auxiliary request 8 - filed at the oral proceedings - admitted - (no) - associated argument not previously presented in appeal proceedings

Decisions cited:

R 0008/16, T 0793/93

Catchword:



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Case Number: T 2148/14 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 5 June 2018

Appellant: THE DOW CHEMICAL COMPANY
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
10 September 2014 concerning maintenance of the
European Patent No. 1874830 in amended form.**

Composition of the Board:

Chairman D. Semino
Members: M. C. Gordon
R. Cramer

Summary of Facts and Submissions

- I. The appeal of the opponent lies against the interlocutory decision of the opposition division posted 10 September 2014 according to which European patent number 1 874 830 could be maintained in amended form on the basis of the main request - set of 11 claims filed by telefax on 10 January 2014.
- II. The patent was granted with a set of 13 claims, whereby claims 1, 5 and 6 read as follows:

"1. A molding composition comprising polyethylene and having a density in the range from 0.915 to 0.955 g/cm³, an MI in the range from 0 to 3.5 g/10 min, an MFR in the range from 5 to 50, a polydispersity M_w/M_n in the range from 5 to 20, a z-average molar mass M_z of less than 1 million g/mol, and at least 0.05 vinyl groups/1000 carbon atoms.

5. A process for preparing the molding composition according to any one of claims 1 to 4, comprising the step of polymerizing ethylene, optionally in the presence of 1-alkenes of the formula $R^1CH=CH_2$, where R^1 is hydrogen or an alkyl radical having from 1 to 10 carbon atoms, at a temperature of from 20 to 200°C and a pressure of from 0.05 to 1 MPa, in the presence of a mixed catalyst comprising a prepolymerized chromium compound and a metallocene compound.

6. A mixed catalyst comprising a prepolymerized chromium compound and a metallocene compound."

Claims 2-4 were directed to preferred embodiments of the moulding composition of claim 1, whereby claim 4 read as follows:

"The molding composition according to any one of claims 1 to 3, wherein the molding composition is obtainable in a single reactor in the presence of a mixed catalyst comprising a prepolymerized chromium compound and a metallocene compound".

Claim 7, dependent on claim 6 and claim 8, dependent on claims 6 or 7, were respectively directed to preferred embodiments of the catalyst and the metallocene component; claims 9-13 were directed to films prepared from the polymer of claims 1-4, processes for preparing these and the use thereof.

III. A notice of opposition against the patent was filed in which revocation of the patent on the grounds of Article 100(a) EPC (lack of novelty, lack of inventive step) and Article 100(b) EPC was requested.

The following document, *inter alia*, was cited in support of the opposition:

D3: US-B-6 780 809.

IV. The decision of the opposition division was based on a set of 11 claims filed as main request on 10 January 2014.

Claim 1 of this request differed from claim 1 of the patent as granted in that:

- the subject-matter of granted (product-by-process) claim 4 was incorporated;
- the lower value of MI was specified as 0.1 g/10 min.

There was no claim corresponding to claim 6 of the patent as granted.

Thus claim 4 corresponded to claim 5 as granted, and claims 5-11 to claims 7-13 of the patent as granted.

According to the decision, the requirements of Article 123(2) EPC and of sufficiency were satisfied.

Novelty was acknowledged since none of the documents disclosed the specified catalyst defined in the "product by process" part of the claim, and the opponent had failed to demonstrate that the process aspect - in particular prepolymerisation of the chromium catalyst component - did not exert any influence over the claimed products. Furthermore it had not been shown that the cited examples of the prior art necessarily resulted in the specified combination of the content of vinyl groups and the value of M_z .

Regarding inventive step, it was a matter of consensus between the parties and the division that the closest prior art was D3. The problem was to provide moulding compositions having simultaneously good mechanical and optical properties and to obtain a highly homogeneous polymer. The skilled person would not take D3 into consideration since it was focused on provision of a catalyst rather than the resulting composition. Nor did a combination of D3 with any of the other documents cited lead to the claimed subject matter.

- V. The opponent (appellant) appealed against this decision, maintaining objections of added subject-matter, insufficiency of disclosure, lack of novelty and lack of inventive step. A further document - D3a (the PCT application from which D3 was derived) - was

submitted.

VI. The patent proprietor (respondent) replied to the statement of grounds of appeal, maintaining the set of claims as upheld by the opposition division as the main request and filing five sets of claims as auxiliary requests 1 to 5. With respect to the auxiliary requests only a very rudimentary explanation was provided, effectively limited to stating that the purpose was to increase the distinction over the prior art. In particular nothing was stated with respect to inventive step.

VII. The Board issued a summons to attend oral proceedings and a communication in which, *inter alia*, it was noted:

- the objections of the appellant with respect to sufficiency of disclosure, added subject-matter and lack of novelty did not appear convincing;
- inventive step of the main request appeared doubtful as did
- the admittance of the auxiliary requests to the proceedings.

VIII. With letter of 5 April 2018 the respondent filed two further sets of claims as new auxiliary requests 1 and 2, the previously filed auxiliary requests being renumbered auxiliary requests 3 to 7. The amendments made were indicated, again with very little explanation, and in particular nothing with respect to inventive step.

For the first time in the procedure, an argument was advanced that D3, example 17 did not represent an enabling disclosure.

IX. With letter of 15 May 2018 the appellant raised objections to the admittance of all sets of auxiliary requests to the proceedings. An objection was also made with respect to the admittance of the new argument in respect of D3, further documents being cited to support the position that there was no lack of enablement.

X. Oral proceedings were held before the Board on 5 June 2018.

In the course of the oral proceedings, following discussion of the main request and auxiliary requests 1-7, the respondent presented a further auxiliary request numbered 8 which was directed to the catalyst in the restricted form as defined in claim 8 of the patent as granted.

XI. The arguments of the appellant can be summarised as follows:

(a) Main request

The objection with respect to the enablement of the disclosure of D3, raised in the letter of the respondent of 5 April 2018 had never previously been raised in the entire opposition and appeal procedure and there had been no developments in the case which would justify raising the objection at this stage of the proceedings. The argument should not be admitted pursuant to Article 13(3) RPBA.

Example 17 of D3 disclosed a moulding composition having all features as required by operative claim 1 apart from the M_z value and the vinyl content. In view of the reported value of M_w , it could be estimated that the M_z would necessarily be in the

claimed range. Similarly with respect to the vinyl content it could be estimated from the proportions of the two catalysts used and the predicted outcomes thereof in respect of the vinyl content that this requirement of claim 1 would likewise be satisfied. The product-by-process feature of prepolymerisation of the Cr component had not been demonstrated to give rise to any differences, meaning that this aspect of the claim also could not provide a distinction over D3.

Regarding inventive step, and accepting for the sake of argument that the subject-matter of claim 1 was in fact novel, the examples of the patent were not suitable to show any effect arising from any of the purported distinguishing features. In any case the alleged distinguishing features would have had to be seen as obvious modifications or were shown to be conventional in the art. Indeed prepolymerisation of the catalyst was expressly proposed in D3 itself. All such polymers would mandatorily have a value of Mz and a vinyl content, and arbitrarily assigning a numerical limit on these features could not provide a basis for recognising an inventive step.

This line of argument applied to all independent claims.

(b) Auxiliary requests 1-7 - admittance

Auxiliary requests 1 and 2 had been filed very late and represented an amendment of the respondent's case. Consequently these should not be admitted to the proceedings. Common to the filing of all auxiliary requests was an absence of any

explanation as to why these should be admitted to the procedure or why they were allowable, i.e. were directed to overcoming the objections raised. For auxiliary requests 3-7 submissions from the opposition procedure had been repeated, which submissions provided only a general indication that the requests were directed to increasing the distinction/distance with respect to the closest prior art but nothing had been said about their relevance for inventive step.

(c) Auxiliary request 8 - admittance

This request had been filed at a very advanced stage of the appeal procedure - i.e. practically at the conclusion of the oral proceedings. This subject-matter had never been presented as an independent claim on appeal, and none of the arguments presented by the respondent addressed this aspect. It was not required for an appellant/opponent to consider every dependent claim at the appeal stage. Thus it was not possible for the appellant to address this request without adjournment of the oral proceedings.

XII. The arguments of the respondent can be summarised as follows.

(a) Main Request

Regarding the objection of non-enablement of the disclosure of D3, it was recognised that there was no justification for raising this matter only at this stage of the proceedings. However this argument resulted from a reading of the document itself which addressed the influence of the

catalyst preparation and of the support employed on the outcome of the polymerisation. Since the argument was based directly on what the document stated it could not be deemed to be late.

Regarding those polymer properties not explicitly disclosed in example 17 of D3, there was no evidence that these would inevitably be within the claimed range. The arguments of the appellant were rather the result of supposition and probability.

Regarding inventive step, it was not disputed that D3 addressed the same technical field and specific problem as the patent in suit. Example 17 was however not identified in D3 as particularly advantageous. Thus the selection thereof as the closest prior was based on hindsight, i.e. in the light of the subject-matter of operative claim 1. If the general teaching of D3 were considered, then it would be necessary to acknowledge that the patent demonstrated technical effects associated with the distinguishing features. D3 itself provided no indication to work within the specific range of parameters as defined in the operative claim. Even if the problem to be solved with respect to example 17 was to be formulated as the provision of an alternative composition, it was not the case that the defined values of Mz and vinyl content would inevitably be selected - this selection would require combination with the teachings of further documents. With regard specifically to the vinyl content the further documents in the procedure constituted only very general indications thereof and provided no clear teaching to the range specifically claimed. Also it was apparent that this feature was subject to wide

variations depending e.g. on the catalyst and reaction conditions used meaning that it was not inevitable that such a value would be obtained or selected.

(b) Auxiliary requests 1-7 - admittance

Even if no detailed explanation as to the rationale behind the first set of auxiliary requests 1-5 (now renumbered as auxiliary requests 3-7) had been provided, there was nevertheless an indication of the restrictions made and the purpose thereof, in particular to increase the distinction over the prior art. In concert with the discussion of the prior art it would have been apparent how the various restrictions made were intended to address the objections raised. The most recently submitted requests - auxiliary requests 1 and 2 - were based on the previously filed auxiliary request 4 (now auxiliary request 6). It was explained at the oral proceedings that these had been submitted in order to address potential problems in respect of added subject matter.

(c) Auxiliary request 8

It had now been realised that the specific mixed catalyst - to which this request was directed - had never been the subject of objections in the appeal proceedings. The oral proceedings represented the final chance to salvage something of the patent, so that for this reason alone the request should be admitted. Even if the appellant had had no opportunity to prepare a response to the requests, the fact that no objections to this subject-matter had ever been raised in appeal proceedings should

be sufficient grounds to allow it.

XIII. The appellant requested that the decision under appeal be set aside and that the European patent No. 1 874 830 be revoked. It further requested that the respondent's auxiliary requests not be admitted to the proceedings and that the respondent's argument that the examples in document D3 were not enabled not be admitted. It furthermore requested that document D3a and the documents filed with the letter of 15 May 2018 be admitted to the proceedings.

XIV. The respondent requested that the appeal be dismissed or alternatively that the decision under appeal be set aside and the patent be maintained in amended form on the basis of one of the sets of claims according to auxiliary request 1 or 2 filed with letter of 5 April 2018, or on the basis of one of the sets of claims according to auxiliary requests 3 to 7, filed as auxiliary requests 1 to 5 with the rejoinder to the statement of grounds of appeal and renumbered with letter of 5 April 2018, or on the basis of the set of claims according to auxiliary request 8 filed during the oral proceedings.

Reasons for the Decision

1. Admittance of argument concerning enablement of D3

D3 has been in consideration throughout the examination, opposition and appeal proceedings. This is evident for example from paragraph 6 of the International Preliminary Report on Patentability and the submission of the then applicant of 25 January 2010 (final part of page 2 continuing onto page 3).

Furthermore, example 17 of D3 was specifically invoked by the appellant in paragraphs 19-22 of the notice of opposition.

At no point in the written or oral examination or opposition proceedings did the respondent raise the question of enablement of the disclosure of the document. Indeed, according to the decision of the opposition division, D3 was considered to represent the closest state of the art which position was shared by both parties (section 4.1 of the decision).

In the initial stage of the appeal proceedings, this was also the position taken by the respondent (rejoinder to the statement of grounds of appeal, page 5 last two complete paragraphs).

The argument, presented for the first time in the letter of 5 April 2018, that D3 and in particular example 17 thereof, did not constitute an enabling disclosure is consequently a change of the case made by the respondent before the Board (Article 13(1) RPBA), which change of case was made after convening of oral proceedings (Article 13(3) RPBA).

This situation is not mitigated by the further submission, made at the oral proceedings before the Board, that it was only recently that a passage in D3 had been noted which would provide a basis for this argument.

Nor did the respondent argue that developments during the latter part of the appeal proceedings, arising either from the preliminary opinion of the Board or from submissions of the appellant would have necessitated a reappraisal of D3 or would have justified applying a different interpretation thereof

compared to earlier stages of the procedure.

Consequently no justification can be identified for the late raising of this argument.

If this line of argument were to be followed, the consequence would be that the entirety of the discussions in particular with respect to inventive step would have to be restarted *ab initio* with no indication of which disclosure is now to be considered as the closest prior art in place of D3, in particular example 17 thereof. Moreover it would not be possible for the appellant to provide evidence (e.g. in the form of experiments) that the disclosure is indeed enabling.

Under these circumstances, *inter alia* since no alternative closest prior art had been proposed, it would be impossible for the appellant or the Board, and presumably also the respondent, to deal with the new situation that would thereby arise without adjournment of the oral proceedings.

Under these circumstances the Board does not admit the new argument pursuant to Article 13(3) RPBA and D3 is therefore to be considered as valid prior art.

2. Main request

2.1 Novelty

Example 17 of D3 relates to polymerisation of ethylene with a mixed metallocene/chromium catalyst. The chromium catalyst component is not subjected to prepolymerisation (starting at column 6, line 60ff, section "Preparation of Catalysts", in particular column 7, lines 1-65 with reference to "Catalyst C").

The resulting polymer is reported to have the following properties (Table 6):

Density: 926 kg/m³ i.e 0.926 g/cm³

MI (MFR2): 1.3 g/10 min

MFR (FFR21/2): 23

Mw/Mn: 7.3.

all of which are within the ranges required by operative claim 1.

The M_z and vinyl content are not disclosed.

The appellant invoked various documents to demonstrate, differences in catalysts and reaction conditions notwithstanding, that it could, to a high degree of probability, be expected that these properties were in the claimed ranges.

In other words, the appellant argued that on the balance of probabilities the subject-matter claimed was anticipated by the prior art represented by D3, example 17.

However according to the established case law and practice of the Boards, when deciding the inevitable outcome of the literal disclosure of a prior art document a higher standard than "balance of probabilities" is to be applied, namely that of "beyond all reasonable doubt" (T 793/93 of 27 September 1995, not published in the OJ EPO, see Catchword).

The appellant did not discharge this burden to the Board's satisfaction, in particular no evidence in the form of repetitions of the teaching of D3 were presented.

Under these circumstances the Board can come to no conclusion other than that the findings of the decision under appeal with respect to novelty have not been demonstrated to be incorrect.

In view of the conclusions reached with respect to inventive step (see below) it is not necessary to consider the question of novelty based on other documents invoked by the appellant.

2.2 Inventive step

2.2.1 Closest prior art

According to the decision under appeal and the written submissions of both parties, at least in the initial stage of the appeal proceedings (see above sections IV, VI, VIII and XII.(a)), it was a matter of consensus that the disclosure of D3 and specifically example 17 thereof represented the closest prior art.

At the oral proceedings before the Board and following conclusion of the discussion with respect to the late filed - and not admitted - objection regarding the enablement of said example, the respondent however retreated from this position.

Although it was acknowledged that D3 and the patent in suit both addressed the same technical area and general problem, i.e. polyethylene compositions for the preparation of films - as set out in the patent in suit in paragraph [0001] and in D3 at column 3, lines 1-4 - it was argued that the identification of specifically example 17 thereof was the result of an *ex post facto* approach.

However the problem solution approach, which forms the framework of analysis of inventive step before the organs of the EPO, necessarily requires knowledge not only of the general technical field and problem to be solved, but also specifically of the subject-matter being claimed. Furthermore the disclosure identified as the closest prior art must be "the most promising springboard" towards the invention (see Case Law of the Boards of Appeal, 8th Edition (2016), section I.D.3.4, in particular 3.4.2).

Thus the identification within D3 of example 17 as the "most promising springboard" to the claimed subject-matter, this being the example within the document which comes closest to the claimed composition is in accordance with the problem-solution approach and does not constitute an inadmissible *ex post facto* analysis.

2.2.2 Distinguishing features

As noted above in the discussion of novelty, the claimed subject-matter is distinguished from example 17 of D3 by the defined values of the M_z and the vinyl content.

2.2.3 Technical effect

The patent in suit contains four examples relating to polymers according to the claims (examples 2-5) and one comparative example (paragraph [0177], tables 1 to 3). In all of examples 2-5 the values of M_z and vinyl content are within the range claimed, i.e. these examples are not suitable to demonstrate whether there is any technical effect associated with these features. The sole comparative example C1 employs a commercial polymer which is identified only to the extent that it

is an ethylene-1-hexene copolymer prepared by means of a metallocene (paragraph [0182]). It is not stated to what extent this comparative material exhibits the features of the claims, nor is the hexene content specified. Nor is any other information provided, e.g. details of the catalyst or reaction conditions employed for its preparation which could provide some indirect indication of the properties thereof disclosed.

Thus it is not possible to ascertain precisely how the composition of the comparative example differs from the materials of examples 2-5 meaning that this example can provide no evidence for a technical effect arising from either of the distinguishing features with respect to the closest prior art.

2.2.4 Objective technical problem

In the light of the absence of any evidence for a technical effect associated with either of the distinguishing features identified, the technical problem to be solved with respect to the closest prior art has to be formulated as the provision of further polymer compositions suitable for film formation.

2.2.5 Obviousness

The Board can concur with the position of the appellant at the oral proceedings, which was not contested by the respondent, that the Mz and vinyl content were necessarily inherent properties of the polymers of D3, notwithstanding that no values were reported. Thus the mere definition of the existence of these properties cannot provide the basis for recognising an inventive step.

As there is no evidence for an effect associated with the claimed ranges of Mz and vinyl content, either individually or in combination (see point 2.2.3, above) the definition of the specific ranges can only be accorded the status of an arbitrary restriction.

Regarding the argument of the respondent that in particular the vinyl content was dependent on the catalyst employed, this indicates simply that there are a wide range of possible values available for this property of the polymers, but does not serve to demonstrate that the definition of a particular value therefore is somehow unexpected or non-obvious. It has for example not been argued, let alone demonstrated by reference to documentary or experimental evidence, that a particular combination of the various features defined would not be expected to be achievable or available or that certain combinations properties as now claimed were considered in the art to be mutually incompatible, for example due to restrictions arising from the mechanism of catalysis and the reaction.

Consequently there is also no basis for the Board to conclude that the mere provision of a composition having a certain combination of properties, even in the absence of technical effects going beyond the constitution of the product, would represent a non-obvious solution to the problem of providing further compositions.

The arbitrary restriction of properties of a composition to particular ranges represents an obvious route to solving the objective technical problem of providing further compositions.

Hence an inventive step must be denied.

3. Auxiliary requests 1, 2 and 3-7 - admittance

The written submissions of the respondent in respect of all these requests were limited to identifying the amendments made and general statements to the effect that the purpose of the amendments was to increase the distinction with respect to the closest prior art.

No explanation was given as to which aspects of the objections raised by the appellant, or the observations made by the Board in its communication (concerning in particular the subsequently filed auxiliary requests 1 and 2) these requests were designed to address, or how the objections would be overcome as a result of the amendments made.

Accordingly there was an almost total absence of any form of substantiation for all these requests. Under these circumstances neither the Board nor the other party (appellant) were in a position to assess these requests and their relationship to the cited prior art and the objections raised in respect thereof.

Thus as far as auxiliary requests 3-7 (filed as auxiliary requests 1-5 with the rejoinder to the statement of grounds of appeal) were concerned, it was not apparent what case was being made, contrary to the provisions of Article 12(2) RPBA.

With regard to auxiliary requests 1 and 2, submitted after issue of the summons to oral proceedings and the communication of the Board, it was likewise not possible to understand the purpose of submitting these or the nature of the case being made. Under these

circumstances it was not apparent how either the Board or the other party could deal with these requests without adjournment of the oral proceedings (Articles 13(1) and (3) RPBA).

Consequently it is decided that none of auxiliary requests 1, 2 and 3-7 are admitted to the proceedings (Article 12(4) and 13 RPBA).

4. Auxiliary request 8 - submitted at the oral proceedings before the Board

The justification for filing this request was, according to the respondent, the realisation that this specific subject-matter had never been attacked during the appeal proceedings.

However by the same token, no submissions on specifically the catalyst were made in the rejoinder to the statement of grounds of appeal. In its submissions during the opposition procedure the respondent had addressed the aspect of the use of the catalyst, however not the constitution of the catalyst itself (reply to the notice of opposition, pages 2 and 3; letter of 10 January 2014, pages 3 main section; minutes of oral proceedings before the opposition division, section 13). Neither the use nor the constitution of the catalyst had ever been directly addressed in submissions during the appeal procedure prior to submission of auxiliary request 8 at the oral proceedings before the Board.

It is recalled that the appeal procedure is a separate procedure and not merely a continuation of the opposition procedure (Case Law, *ibid.* Section IV.E.1). This was confirmed and emphasised in Review case R 8/16

(10 July 2017, not published in the OJ EPO), paragraph 38 of the reasons in which it is clarified that a Board has no obligation to peruse the whole file of the first instance proceedings. On the contrary, according to the EBA, it is the duty of the parties to raise issues again in the appeal proceedings in accordance with Articles 12(1) and (2) RPBA as required.

The presentation, at the very end of the appeal proceedings of a new request, relying on features which had never previously been addressed in the appeal proceedings thus complies neither with the purpose of the appeal proceedings in general, nor with the explicit requirements of the RPBA as set out in Article 12(1) and (2) thereof.

Furthermore neither the Board nor the appellant would have been in a position to address these new issues raised without adjournment of the oral proceedings, contrary to Article 13(3) RPBA.

Consequently auxiliary request 8 is not admitted to the proceedings.

5. In the light of the foregoing there is no necessity for the Board to address the further matters raised by the appellant, in particular the objections of added subject-matter and sufficiency of disclosure.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



I. Aperribay

D. Semino

Decision electronically authenticated