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D E C I S I O N
of 28 September 2000

Case Number: T 0144/98 - 3.3.3

Application Number: 86304806.2

Publication Number: 0206794

IPC: C08F 4/76

Language of the proceedings: EN

Title of invention:
Supported polymerization catalyst

Patentee:
EXXON CHEMICAL PATENTS INC.

Opponent:
Montell Technology Company bv

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 83, 84

Keyword:
"Claims - clarity - relation to sufficiency of disclosure (no)"
"Novelty - prior disclosure - implicit features (no)"
"Inventive step - known process - non-obvious alternative"

Decisions cited:
G 0010/91, G 0004/95, T 0301/87, T 0606/89, T 0795/93

Catchword:
-



Case Number: T 0144/98 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 28 September 2000

Appellant: EXXON CHEMICAL PATENTS INC.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 4 December 1997
revoking European patent No. 0 206 794 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: C. Gérardin
Members: B. ter Laan
A. Lindqvist

Summary of Facts and Submissions

I. Mention of the grant of European patent No. 0 206 794 in respect of European patent application No. 86 304 806.2, filed on 23 June 1986, claiming priority from an earlier application in the USA (747615 of 21 June 1985), was published on 3 November 1993 (Bulletin 93/44) on the basis of eleven claims, Claim 1 reading:

"A method of preparing an olefin polymer comprising the steps of

(a) injecting a catalyst into a polymerization reactor; and

(b) polymerizing olefins in the reactor, characterised in that the catalyst contains metallocene and alumoxane deposited on a support obtained by completing a reaction of the metallocene, alumoxane and support in an inert solvent and recovering the catalyst."

Claims 2 to 10 referred to preferred embodiments of the method according to Claim 1.

Claim 11 was directed to:

"The use in a method of preparing an olefin polymer comprising the steps of

(a) injecting a catalyst into a polymerization reactor; and

(b) polymerizing olefins in the reactor, of a catalyst containing metallocene and alumoxane deposited on a support which has been prepared by completing a reaction of the metallocene, alumoxane and support in an inert solvent and recovering the

catalyst."

- II. On 20 July 1994 a Notice of Opposition against the granted patent was filed, in which the revocation of the patent in its entirety was requested on the grounds set out in Articles 100(a) and 100(b) EPC.

The opposition was, *inter alia*, supported by the following documents:

D1: EP-A-0 128 045, originally cited as EP-A-0 128 145

D2: EP-A-0 142 143 and

D3: DE-A-3 240 382, originally cited as the C-document, but later referred to as the A-document by the Opposition Division as well as the parties.

- III. In a decision delivered orally on 24 October 1997 and issued in writing on 4 December 1997, the Opposition Division revoked the patent. That decision was based on the set of eleven claims as granted as the main request, a set of eleven claims, filed on 24 October 1997, as the first auxiliary request and a set of eleven claims, also filed on 24 October 1997, as the second auxiliary request. Claims 1 and 11 of the first auxiliary request were directed to the same method and use, respectively, as in the main request, however disclaiming the preparation of olefin polymers finally containing at least 0.5% filler material. Claims 1 and 11 of the second auxiliary request additionally contained the requirement that the catalyst should be injected as the sole catalyst.

In substance the Opposition Division held that

for the main request:

- (a) As regards Article 83 EPC, the patent specification contained sufficient information to enable the skilled person to prepare the catalyst. No evidence as to the contrary had been provided.
- (b) D2, Example 12, disclosed all the features of Claims 1 and 11 of the patent in suit. No technical difference could be seen between the word "filler" of D2 and the present "support". Hence the claimed subject-matter of the main request was not novel.

for the first auxiliary request:

- (c) The introduction of a disclaimer based on D2 to restore novelty was not objectionable under Articles 123(2) and (3) EPC.
- (d) Novelty was acknowledged as the other examples of D2 did not describe the combination of features required by the independent claims.
- (e) As regards inventive step, D1 was considered to be the closest document. The problem to be solved was to provide an olefin polymerization process using supported metallocene based catalysts where the number of delivery systems for introducing the catalyst into the polymerization reactor was low. It was a general principle that the metallocene had to be activated with an aluminum cocatalyst. When faced with the above-defined problem, the skilled person could do nothing else but combine the supported metallocene and the aluminoxane

outside the reactor and then add the pre-activated catalyst into the polymerization vessel. The claimed subject-matter was therefore not inventive. Apart from that, it was noted that all the examples fell outside the scope of the claims.

for the second auxiliary request:

- (f) The wording "as a sole catalyst" in the second auxiliary request did not comply with Article 84 EPC, since it was unclear in the light of the examples and the description.

IV. On 4 February 1998 the Appellant (Proprietor) lodged an appeal against the above decision and paid the prescribed fee simultaneously.

- (a) With the Statement of Grounds of Appeal, filed on 2 April 1998, a set of eleven claims was filed as the new main request. In a further submission dated 8 August 2000, five new sets of claims were filed and a further four sets were indicated - though not specified - as the main (set A') and eight auxiliary requests (sets A, B', B, C, D', D, E', and E). Arguments pertaining to those claims, a declaration of the inventor, a number of additional experiments and a comparison of data were also submitted. During the oral proceedings held on 28 September 2000, following the discussion of the compliance of set A' with Article 123(2) EPC and after the issues of clarity, support, sufficiency of disclosure, novelty and inventive step of set C were considered, four new sets of claims (labelled C, F, I and G; based on sets C, D, B and E,

respectively) were filed. Finally, the Appellant requested that the patent be maintained on the basis of the nine claims of set I, Claim 1 of which reads:

"A method of preparing an olefin polymer comprising the steps of
(a) injecting a catalyst into a polymerization reactor; and
(b) polymerizing olefins in the reactor, characterised in that the catalyst contains metallocene and alumoxane deposited on a support of porous inorganic metal oxide of a group 2a, 3a, 4a or 4b metal, and has an aluminium to transition metal ratio in the range of 100:1 to 1:1 on a molar basis, the catalyst being obtained by completing the reaction of the metallocene, alumoxane and porous support in an inert solvent and recovering the catalyst as a solid material."

Claims 2 to 8 refer to preferred embodiments of the method according to Claim 1.

Claim 9 is directed to:

"The use in a method of preparing an olefin polymer comprising the steps of
(a) injecting a catalyst into a polymerization reactor; and
(b) polymerizing olefins in the reactor, of a catalyst containing metallocene and alumoxane deposited on a support of porous inorganic metal oxide of a group 2a, 3a, 4a or 4b metal, and has an aluminium to transition metal ratio in the

range of 100:1 to 1:1 on a molar basis, the catalyst being prepared by completing the reaction of the metallocene, alumoxane and porous support in an inert solvent and recovering the catalyst as a solid material."

(b) The Appellant, in writing and during the oral proceedings, argued essentially as follows:

(a) The wording of the claims complied with the requirements of Articles 123(2) and 84 EPC. On the one hand, the objection under Article 123(2) EPC against the word "injecting" was not well founded, since the latter appeared in the original description and in Claim 1 as granted; therefore, raising the point now amounted to a introducing a new ground for opposition. On the other hand, the word "porous" was present in both the original and the granted versions of Claim 2 and any argument concerning its clarity fell under Article 84 EPC, which was not a ground for opposition.

(b) Article 83 EPC related to the entire description, not to the claims as such. Although the Respondent had expressed doubts as to the possibility of performing the invention as described, no evidence had been provided that the examples could not be reproduced.

(c) As to novelty, none of the documents disclosed the low aluminium to transition metal ratio now required, nor were a porous

support or the recovery of the complete catalyst either inside or outside of the reactor mentioned. Also, D2 referred to fillers, not to supports, which implied that different amounts were used. Therefore, the claimed subject-matter was novel.

- (d) Regarding inventive step, the problem had three aspects: (i) a high activity of the catalyst, (ii) a catalyst with a low aluminum to transition metal ratio and (iii) reducing the number of delivery systems. Furthermore, the catalyst incorporated comonomers in a more efficient way.

As could be seen from Appendix 3, Table 2, filed with the letter dated 8 August 2000, in which the examples of the patent were compared, the claimed method solved the various features of the above-defined problem. Furthermore, gas phase polymerization was the most difficult to perform, so that the solution offered for gas phase polymerization would also work in other polymerization systems.

Since none of the documents disclosed the low aluminium to metal ratio, the skilled person would not turn to any of them to solve the problem as defined above.

Starting from D1 as the closest document, which also referred to high activity, the examples and a number of additional examples demonstrated that the present catalyst had a higher yield at a lower aluminum/transition metal ratio. D1 taught to

deposit the metallocene on the support and to add the aluminoxane separately, so that it could not render obvious the present combination of both metallocene and aluminoxane on the support. Furthermore, it was not known from any document or from common general knowledge to combine the metallocene and the aluminoxane on the support. Therefore, the claimed subject-matter was inventive.

- V. The Respondent (Opponent), with the response to the Statement of Grounds of Appeal, referred to a new document and in a later statement dated 24 August 2000, submitted three further documents as well as a test report. Additional arguments were provided in a letter dated 18 September 2000.

The Respondent argued in essence as follows:

- (a) The word "injecting" in the new claims did not comply with Article 123(2) EPC.
- (b) The introduction of the word "porous" rendered the claims unclear (Article 84 EPC) or lacking in enabling disclosure (Article 83 EPC). The test report filed on 24 August 2000 supported that argument.
- (c) Regarding novelty, the recovery of a solid catalyst before using it in polymerization as well as the word "injecting" were not distinguishing features in view of the documents on file, in particular D2. In that respect, there was no difference between the "filler" of D2 and the present "support".

- (d) D1, the closest document, envisaged the use of a supported catalyst in a gas phase polymerization process. Since it was common general knowledge in the field of Ziegler-Natta catalysts to pre-activate supported catalysts, the skilled person would apply that knowledge to the field of metallocenes. All of the examples of the patent in suit referred to gas phase polymerization. In such systems it was not possible to use any other than supported catalysts. The new documents provided further support for the argument that the knowledge in the field of Ziegler-Natta catalysts provided an incentive for the skilled person to support both the metallocene and the aluminoxane. Completing the reaction and preparing the catalyst in advance and separate it from the solvent were also normal ways of proceeding. None of the examples showed a surprising effect of the combination of features as now claimed. Any such conclusion based upon a comparison of the results of the present examples with those of D1 and D2 was not correct since the latter described liquid polymerization processes, which could not be compared with gas phase polymerization. Moreover, there was no evidence that any effect achieved in gas phase polymerization was also accomplished in other types of polymerization. Although in principle a catalyst which was used in gas phase polymerization could most probably also be used in liquid or slurry polymerization, any superior results for the products of gas phase polymerization could not be automatically expected from the products of liquid or slurry polymerization. Therefore, there was no evidence that the claimed process achieved its aim over the

full scope of the claim.

Therefore, no inventive step was present.

VI. By a letter filed on 5 September 2000, a third party also gave arguments relating to this case (Article 115 EPC). It supported the Respondent's argumentation regarding the lack of novelty in view of D2. As to inventive step, the combination of D1 and D3, which concerned supported heterogeneous catalyst systems in olefin polymerization and which described the recovery as a solid of the catalyst, rendered the claimed subject-matter obvious. There was a clear incentive to combine these two documents in view of the use of the catalysts for gas phase polymerization. Furthermore, no support for any superior effect could be found in the additional data of the Appellant, in particular over D1.

VII. The Appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of set I (Claims 1 to 9).

The Respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Procedural matters

2. In view of the fact that the Appellant's representative was accompanied by an unannounced person, the Board first recalled the principles governing the presence of

technical experts as laid down in Decision G 4/95 (OJ EPO 1996, 412). In the discussion of the substantive issues the need for that person to provide additional information did not arise, so that his presence did not interfere with proper proceedings.

From the Summary of Facts and Submissions it also appears that the Board was confronted with three further procedural problems:

- (i) the filing of four late documents by the Respondent,
- (ii) the filing of a late test report by the Respondent and
- (iii) the filing of a late test report by the Appellant.

Regarding the new citations and experimental test reports provided by the parties for the first time in the appeal proceedings, the Board invited the representatives to justify the relevance of that evidence in the light of the Reasons for the Decision given by the first instance and the arguments put forward so far in writing. Since it appeared that those late submissions might contribute to clarify one or the other feature of the process for which the parties had opposite interpretations, the Board did not formally exclude any of them, inviting however the parties not to rely primarily on them. The subsequent discussion of the substantive issues did not show the need to introduce any of the new citations and experimental test reports into the proceedings, so that there will be no reference to them hereinafter.

Amendments

3. Claim 1 of the main request differs from Claim 1 as granted in that the support is now specified as being a porous inorganic metal oxide of a group a, 3a, 4a or 4b metal, and in that the catalyst has an aluminium to transition metal ratio in the range of 100:1 to 1:1 on a molar basis. The basis for these amendments can be found in original Claims 2 and 6 (Claims 2 and 6 as granted).

3.1 The word "injected", against which the Respondent raised an objection under Article 123(2) EPC, was present in Claim 1 as granted. The opposition had been based upon Articles 100(a) and 100(b) EPC. Article 100(c) EPC had not been mentioned either during the nine months opposition period or during the proceedings before the first instance. Therefore, it concerns a fresh opposition ground to the introduction of which the Appellant did not give its consent. In accordance with Decision G 10/91 (OJ EPO 1993, 420), fresh grounds for opposition may not be introduced during the appeal stage without the consent of the Proprietor. In the present case, this is all the more valid since the Proprietor is the Appellant, the Opponent being the Respondent. Therefore, the Board decided not to admit the issue into to the proceedings.

3.2 The amendments in Claims 2 to 9 concern a mere renumbering and are the consequence of the amendments of Claim 1. Therefore, the requirements of Article 123(2) EPC are met.

3.3 The amendments to the claimed subject-matter amount to limitations, so that the requirements of Article 123(3)

EPC are satisfied as well.

- 3.4 No objection pursuant to Article 84 EPC arises from the amendments, since they aim at a qualitatively more specific definition of the support and a quantitatively narrower definition of the catalyst composition.

Sufficiency of Disclosure

4. The Respondent objected against the word "porous" as rendering the disclosure of the invention insufficient.
- 4.1 The presence of an unclear term in a claim *per se* does not provide the basis for an objection under Article 83 EPC, though it may contravene Article 84 EPC, which is not a ground for opposition (Article 100 EPC) unless it arises out of the amendments made (T 301/87, OJ EPO 1990,335).

In the present case, the word "porous" was present in Claim 2 as granted, the catalyst being defined as deriving "from a support of porous inorganic metal oxide". By virtue of its dependence on Claim 1, Claim 2 contained all the features of that claim, so that the introduction of the subject-matter of Claim 2 into Claim 1 cannot be regarded as an amendment against which a clarity objection might be raised. Therefore, the issue of clarity as raised by the Respondent cannot be considered anymore.

- 4.2 In accordance with the foregoing, the Respondent also raised an objection under Article 83 EPC concerning the term "porous". This ground of opposition had been raised as from the beginning, however, based on a different argument. Article 83 EPC pertains to the

information contained in the original application as a whole, not only to the claims. In view of the passage on page 6, lines 48 to page 7, line 3, where a clear definition of the term "porous" is given, the Board considers that the skilled person would be in a position to choose a suitable material as support for the transition metal and the aluminoxane. The requirements of Article 83 EPC are fulfilled.

Novelty

5. The only document that was used against novelty was D2.

5.1 D2 describes a process for producing a polyethylene composition which comprises polymerizing ethylene or copolymerizing ethylene and a small amount of other α -olefins in the presence of:

(A) a product resulting from contact treatment of

(a) a high activity catalyst component containing a transition metal and soluble in a hydrocarbon solvent, and

(b) a filler; and

(B) an organoaluminium compound (Claim 1).

As catalyst component (a), for instance cyclopentadienyl compounds are mentioned (page 7, first full paragraph, to page 8, line 4). Compounds prepared by reacting cyclopentadienylzirconium with aluminoxane, preferably before mixing with filler compound (b), are described in the paragraph bridging pages 7 and 8.

The filler (b) is not critical and may be, amongst numerous other compounds, silica (paragraphs bridging pages 9, 10 and 11; in particular, page 10, line 1). Component (a) is added in such an amount that the (co)polymerization can be carried out efficiently and no deashing step is needed after the polymerization; component (b) is added in such an amount that the filler content of the ultimate polyethylene composition is at least 0.5% by weight (page 13, last paragraph).

Component (A) may be introduced in the reaction system in slurry form or after the separation of the solvent or medium in which it was prepared (page 15, lines 5 to 7). Although the polymerization is stated to be carried out by suitable techniques such as slurry and gas phase polymerization (paragraph bridging pages 18 and 19), the examples only illustrate slurry polymerization and in only some of the examples a supported catalyst is applied.

- 5.2 In Example 12 in conjunction with Example 10, which played a major role in the parties' submissions, triiron tetraoxide is treated with a mixture of 0.005 mmoles of dicyclopentadienyl zirconium dichloride and 6 mmoles of aluminoxane (the aluminium to transition metal ratio thus being 1200). The contact treatment product is then placed into the reactor, 6 mmoles of triethylaluminium are added and ethylene is polymerized.

The subject-matter of Claim 1 of set I differs in at least two aspects from the disclosure of Example 12: the filler or support and the aluminium/transition metal ratio. Although the description mentions e.g. silica as a filler, many other possibilities are also

described and in the specific embodiment of Example 12, or in any other example, no filler as now claimed is actually used. Moreover, the specific aluminium/transition metal ratio used there does not fall within the range specified in Claim 1 of the patent in suit.

5.3 Therefore, neither the general definition of the process according to D2, nor the specific embodiment of Example 12 disclose the subject-matter now claimed.

5.4 No other documents were cited against novelty so that, in the light of the disclosure of the documents on file, the Board comes to the conclusion that the claimed subject-matter is novel.

Problem and solution

6. The patent in suit concerns supported polymerization catalysts. Both the parties and the Opposition Division regarded D1 as the closest state of the art.

6.1 D1 concerns a catalyst system for the (co)polymerization of ethylene to polyethylene having a broad molecular weight distribution, said catalyst comprising (a) at least two different metallocenes which are mono, di or tricyclopentadienyl derivatives of a Group 4b, 5b and 6b transition metal, each having different propagation and termination rate constants for ethylene polymerizations and (b) an alumoxane (Claim 1). Transition metals mentioned are titanium, zirconium, vanadium and hafnium (page 7, line 17 to page 8, lines 33). The ratio of aluminium in the alumoxane to total metal in the metallocenes can be in the range of 0.5:1 to $10^5:1$, preferably 5:1 to $10^3:1$

(page 8, lines 34 to 36). According to page 9, lines 26 to 31 the soluble metallocenes can be converted to supported heterogeneous catalysts by depositing them on supports such as silica. The solid catalysts in combination with aluminoxane can be employed in slurry and gas phase olefin polymerization. However, in none of the examples a supported catalyst is actually used, nor is gas phase polymerization applied, and the aluminium to transition metal ratio greatly exceeds the present range.

The object of D1 is to produce polyethylene having a broad molecular weight distribution in a single polymerization process (paragraph bridging pages 2 and 3). This is achieved by using a mixed catalyst, that is, a catalyst comprising at least two different metallocene components, each having different propagation and termination rate constants for ethylene polymerization, and an aluminoxane (page 3, lines 20 to 27). Although the possibility of bringing the metallocenes onto a support is mentioned in a general way (page 9, lines 26 to 31), there is no teaching to have the aluminoxane codeposited on the support as well, let alone is there any advantage mentioned for such a combination. The same is valid for the aluminium to transition metal ratio.

- 6.2 According to the specification of the patent in suit the object of the invention is, first, to provide a very active metallocene based catalyst which, secondly, allows high ratios of aluminoxane to metallocene without subsequently requiring an extensive treatment of the polymer product in order to remove undesirable aluminium and, thirdly, does not require the presence of a cocatalyst thereby reducing the number of delivery

systems for introducing catalyst into polymerization reactor (page 2, lines 43 to 46).

D1, however, aims at the production of a polymer having a broad molecular weight distribution; that document is not concerned with any of the above indicated points. In general, a document serving as the starting point for evaluating the inventive merits of an invention should relate to the same or a similar technical problem or, at least, to the same or a closely related technical field as the patent in suit (see decisions T 606/89 of 18 September 1990 and T 795/93 of 29 October 1996; both unpublished in OJ EPO).

Therefore, D1 does not qualify as a proper starting point for the evaluation of the inventive merits of the claimed subject-matter.

6.3 Nevertheless, for the sake of the present decision, the Board will follow the approach adopted by the parties during oral proceedings and, consequently, regard D1 as the closest document.

6.4 According to the Appellant, apart from the three features of the object of the invention as pointed out above (point 6.2), a further aim was to achieve a more efficient incorporation of comonomers. The Respondent denied that all the aspects of the thus defined technical problem had been effectively solved by the measures taken according to Claim 1. However, the parties agreed that the catalyst was suitable for gas phase polymerization. On that base, the Board takes the view that the technical problem may be seen in the broad definition of providing a method suitable for preparing olefin polymers, also in gas phase

polymerization.

- 6.5 The examples in the application demonstrate that the above-defined problem is effectively solved. In particular, the present method is efficient at polymerizing ethylene homo- and comonomers in the gas phase. The Respondent, after having expressed doubts that the results obtained in gas phase polymerization could be extended to other polymerization processes, stated that in principle a catalyst suitable for use in gas phase polymerization could most probably be used in liquid or slurry polymerization as well, but that any superior results of the gas phase process could not automatically be expected from the products of the other types of polymerization process. In view of the broad definition of the technical problem as well as the lack of evidence of the contrary (which would have had to be submitted by the Respondent, which, as the Opponent, has the burden of proof), the Board accepts that the above problem is effectively solved over the whole scope of the claimed subject-matter.

Obviousness

7. It remains to be decided whether the claimed subject-matter is obvious having regard to the documents on file.
- 7.1 According to D1, the aluminium to transition metal ratio can be from 0.5:1 to 10^5 :1. However, in the examples, the actual ratio (varying from 466 in Example 3 to 4953 in Example 5) used in a slurry polymerization with an unsupported catalyst, is much higher than the present upper limit. Moreover, although D1 mentions the support of metallocenes, there is

nothing to suggest that supporting the aluminoxane as well as the transition metal compound in the desirably low aluminium to transition metal ratio would lead to an active catalyst which could also be used in gas phase polymerization. Therefore, D1 by itself does not render the claimed subject-matter obvious.

7.2 The aim of D2 is to provide a process for the production of polyethylene compositions, in which a filler is dispersed uniformly irrespective of the amount of filler added and separation of the filler does not occur (page 3, first paragraph). In the examples only slurry polymerization is applied and in only one (Example 12) of the 73 examples a catalyst is applied that comprises a support upon which both a metallocene as well as aluminoxane are deposited, the support however being triiron tetraoxide and the aluminium to transition metal ratio being 1200.

7.3 The aim of D3 is to provide a process that, in the presence of a great amount of inorganic filler and low catalyst concentration, produces polyolefin mixtures having advantageous properties.

In particular, D3 describes a process for the polymerization of olefins by polymerizing at least one olefin in the presence of a catalyst system that contains an inorganic filler, the latter containing crystal water or otherwise bonded water, by treating the filler with trialkyl aluminium, replacing the water containing compounds, and then adding a titanium or zirconium compound which is soluble in an organic solvent (Claim 1 in conjunction with page printed 3, line 34 to page printed 5, line 7). The filler, which can be all kinds of inorganic matter (page printed 7,

lines 31 to 36) can act as a cocatalyst (paragraph bridging pages printed 3 and 4). It can be present in the range of from 1 to 90 weight % of the composition. (page 8, lines 4 to 6). The aluminium to transition metal ratio is in the range of 10:1 to $10^8:1$, preferably around $10^5:1$ (page 5 - printed number, lines 25 to 28). According to page 7, lines 19 to 25, and in the examples, first the aluminoxane is brought onto the support, then the transition metal compound, and finally the monomer is added. In the examples the support, $\text{CaSO}_4 \cdot 0,5 \text{H}_2\text{O}$ or CaCO_3 , in toluene is treated with an aluminium compound, then a metallocene and ethylene are added and the polymerization is carried out. Hence they illustrate slurry polymerization in which (i) the amount of filler is in the same order of magnitude as the amount of polymer produced, (ii) the aluminium to transition metal ratio is much higher than the now claimed upper limit and (iii) the catalyst is not recovered prior to polymerization.

7.4 Therefore, the information contained in D2 and D3 would, taken alone or in combination with D1, not result in the present specific combination of features. In particular, it could not be learned that the combination of a specific support, carrying both the aluminoxane and the transition metal compound in a low ratio, would result in an active polymerization catalyst also suitable for gas phase polymerization.

7.5 For the above reasons, the Board comes to the conclusion that the subject-matter of Claim 1 involves an inventive step.

8. As Claim 1 of the main request is allowable, the same is valid for dependent Claims 2 to 8, the patentability

of which is supported by that of Claim 1. The above considerations also apply to independent Claim 9 since its subject-matter is based on the same combination of features as in Claim 1.

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 Claims 1 to 9 according to Set I submitted during oral proceedings, after any consequential amendment of the description.

The Registrar:

The Chairman:

E. Görgmaier

C. Gérardin