Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 3 February 2022

Case Number: T 1210/18 - 3.3.03

Application Number: 11769863.9

Publication Number: 2627703

IPC: C08L23/12, C08F210/06

Language of the proceedings: EN

Title of invention:
AUTOMOTIVE INTERIOR ELEMENT

Patent Proprietor:
Basell Poliolefine Italia S.r.l.

Opponent:
W.R. Grace & Co.-Conn.

Relevant legal provisions:
EPC Art. 56
RPBA Art. 12(4)

Keyword:
Inventive step - (yes)
Late-filed evidence - admitted (no)

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1210/18 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 3 February 2022

Appellant: (Opponent)	W.R. Grace & Co.-Conn. 7500 Grace Drive Columbia, MD 21044-4098 (US)
Representative:	Kutzenberger Wolff & Partner Waidmarkt 11 50676 Köln (DE)
Respondent: (Patent Proprietor)	Basell Poliolefine Italia S.r.l. Via Pontaccio 10 20121 Milano (IT)
Representative:	LyondellBasell c/o Basell Poliolefine Italia Intellectual Property P.le Donegani 12 44122 Ferrara (IT)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 29 March 2018 rejecting the opposition filed against European patent No. 2627703 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	D. Semino
Members:	D. Marquis
	R. Cramer

Summary of Facts and Submissions

I. The appeal of the opponent lies from the decision of the opposition division posted on 29 March 2018 rejecting the opposition against European patent No. 2 627 703.

II. Claim 1 as granted read as follows:

"1. Automotive interior element comprising a polypropylene composition comprising (percent by weight):

A) from 60% to 90% of a propylene homopolymer having:

i) a polydispersity Index (P.I.) value of from 3.5 to 10.0;
ii) a fraction insoluble in xylene at 25 °C, higher than 90 %; and
iii) a MFR L (Melt Flow Rate according to ISO 1133, condition L, i.e. 230°C and 2.16 kg load) from 50 to 200 g/10 min;

B) from 10% to 40%; of a copolymer of propylene with from 30% to 60% of ethylene derived units;

the composition having an intrinsic viscosity of the fraction soluble in xylene at 25 °C comprised between 2.5 and 4.0 dl/g; a MFR L (Melt Flow Rate according to ISO 1133, condition L, i.e. 230°C and 2.16 kg load) from 15 to 100 g/10 min and all the three values of carbon emission measured according to VDA 227 (C-emission) are lower than 30.0 µgC/g; wherein the values of carbon emission are measured in the ex reactor propylene composition".

Granted claim 6 read as follows:

"6. Use for automotive interior element of a polypropylene composition comprising (percent by weight):

A) from 60% to 90% of a propylene homopolymer having:

i) a polydispersity Index (P.I.) value of from 3.5 to 10.0;
ii) a fraction insoluble in xylene at 25°C, higher than 90 %; and
iii) a MFR L (Melt Flow Rate according to ISO 1133, condition L, i.e. 230°C and 2.16 kg load) from 50 to 200 g/10 min;

B) from 10% to 40%; of a copolymer of propylene with from 30% to 60% of ethylene derived units;

the composition having an intrinsic viscosity of the fraction soluble in xylene at 25°C comprised between 2.5 and 4.0 dl/g and a MFRL of from 15 to 100 g/10 min; said propylene composition being obtained with a polymerization process carried out in the presence of a catalyst system comprising the product obtained by contacting (a) a solid catalyst component having average particle size ranging from 15 to 80 µm comprising a magnesium halide, a titanium compound having at least a Ti-halogen bond and at least two electron donor compounds one of which being present in an amount from 50 to 90% by mol with respect to the total amount of donors and selected from succinates and the other being selected from 1,3 diethers, (b) an aluminum hydrocarbyl compound and optionally (c) an

external electron donor compound".

III. The decision of the opposition division was based *inter alia* on the following documents:

G10: WO2010082943
G12: J.C. Chadwick et al., Macromolecules 2004, 37, pages 9722-9727
G22: Nello Pasquini, Propylene Handbook, Hanser 2005, 2nd edition, pages 314-317

IV. As far as it is relevant to the present appeal, the decision of the opposition division can be summarized as follows:

- G10 was the closest prior art. G10 was silent about the polydispersity index (P.I.) of the propylene homopolymer (granted claim 1 required a value from 3.5 to 10) and the intrinsic viscosity of the fraction soluble in xylene at 25°C of the polypropylene composition (granted claim 1 required a value from 2.5 to 4.0 dl/g). G10 did therefore not disclose an interior automotive element made of a polypropylene composition fulfilling all the requirements of granted claim 1.

- The patent in suit did not establish the presence of an effect for these two features. The problem solved was the provision of an alternative automotive interior element made of a polypropylene composition.

- The formulation of two separate technical problems was not appropriate, as the suitability of a polypropylene composition as material for manufacturing automotive interior elements depended

on the combination of physical and chemical properties of the composition. Also, the parameters defining the composition according to granted claim 1 were dependent from one another.

- None of the cited prior art contained a hint to a combination of a polydispersity of the matrix of 3.4 to 10.0 and an intrinsic viscosity of the dispersed phase of 2.5 to 4.0 dl/g. Even if the skilled person considered the prior art teachings concerning the polydispersity and the intrinsic viscosity in independent documents, this would not inevitably lead to a composition as defined in granted claim 1. In particular, D1 showed that melt flow rates for the matrix and the propylene impact copolymer could be outside the range of granted claim 1. G10 additionally considered volatiles content outside the range of granted claim 1.

- There was no teaching in the prior art for a polypropylene composition as material for manufacturing automotive interior elements as defined in granted claim 1. Granted claim 1 was thus inventive in view of G10.

V. The opponent (appellant) lodged an appeal against that decision and filed documents G23 to G26 with their statement setting out the grounds of appeal and G27 with a further letter sent later on the same day as follows:

G23: N. Pasquini, Polypropylene Handbook, Hanser, 2005, pages 15-18, 83-89, 223-228, 286-289 and 307-313
G24: S. van der Ven, Polypropylene and other Polyolefins, Elsevier 1990, pages 321-336
G25: D. Tripathi, Practical Guide to Polypropylene,

Rapra Technology, 2002, pages 19-21
G26: WO 2010/078480
G27: E.P. Moore, Polypropylene Handbook, Hanser, 1996, 149-164 and 240-249

VI. With the reply to the statement of grounds of appeal the patent proprietor (respondent) submitted the first to sixth auxiliary requests and requested that the newly filed documents not be admitted into the appeal proceedings.

VII. Oral proceedings were summoned for 10 December 2021 and a communication containing a preliminary opinion of the Board on the case dated 6 July 2021 was sent to the parties.

VIII. With letter of 12 November 2021, the appellant informed the Board that they would not attend oral proceedings scheduled for 10 December 2021 and that their request for oral proceedings was withdrawn.

IX. The arguments of the appellant, insofar as relevant to the present decision, may be summarised as follows:

Admittance of G23-G27

- G23-G25 and G27 were extracts of monographs reflecting the common general knowledge. G26 was *prima facie* highly relevant for inventive step. On this basis, these documents should be admitted into the proceedings.

Inventive step

- G10 was the closest prior art. G10 was silent as to the polydispersity index (P.I.) of the propylene

homopolymer and the intrinsic viscosity of the fraction soluble in xylene of the polypropylene composition. Granted claim 1 also differed from samples A and F of G10 in that the propylene homopolymer had a polydispersity index (P.I.) of from 3.5 to 10.0, the polypropylene composition had an intrinsic viscosity of the fraction soluble in xylene at 25°C comprised between 2.5 and 4.0 dl/g and it had a volatiles content lower than 30.0 µgC/g.

- There was no experimental data in the patent in suit that allowed a direct comparison with G10. The technical effect resulting from any of the distinguishing features of granted claim 1 was therefore unknown. The problem was thus the provision of an alternative automotive interior element made of a polypropylene composition.

- The question of obviousness was whether the skilled person starting from G10 and seeking an alternative automotive interior element was motivated to modify G10 by the distinguishing features thereby arriving at an automotive interior element that fell under the scope of claim 1.

- The polydispersity index (P.I.) depended upon the catalyst system (internal/external donor) being employed in the polymerization process and its value correlated with the molecular weight distribution (Mw/Mn). Table 2 and Figure 1 of G12 showed that when diether or succinate-based systems were used as internal donors, polypropylene homopolymers with a polydispersity index (P.I.) varying between 4.7 and 9.2 could be obtained. G23 also showed that the skilled person knew how to

purposefully adjust the polydispersity index (P.I.) in a predictable manner.

- With regard to the intrinsic viscosity of the fraction soluble in xylene, G22 showed that under the given conditions (Figure 5.10), the Izod impact strength at -30°C reached its maximum at an intrinsic viscosity of the elastomeric component of about 2.5 dl/g, a value according to granted claim 1. The intrinsic viscosity was also a function of the melt flow rate MFR (G23). Moreover, the skilled person knew how to adjust the melt flow rate of the elastomeric component soluble in xylene by adjusting the parameters of the polymerization such as the amount of hydrogen in the reactors. G24 and G27 showed how to adjust the intrinsic viscosity of the elastomeric component towards higher values in order to improve the impact properties of the heterophasic composition.

- With regard to the volatiles content, a skilled person would always try to reduce substances that were hazardous for the environment. G10 already taught that it was desirable to keep the volatiles content low and that low amounts of volatiles content advantageously reduced, or eliminated a subsequent purge procedure during the preparation process of the copolymer (paragraph 102). This showed that the volatiles content could be reduced by purge procedures.

- The claimed subject-matter was therefore a mere aggregation of features that were independent from one another and it was within the general knowledge of a skilled person by which conventional measures these parameters and functionally defined features

could be altered in a particular direction. The subject-matter of the granted patent thus did not involve an inventive step over G10.

X. The arguments of the respondent, insofar as relevant to the present decision, may be summarised as follows:

Admittance of G23-G27

- G23-G26 were clearly late filed and could have been filed in the first instance proceedings. These documents should therefore not be admitted into the proceedings.

Inventive step

- G10 was the closest prior art. Considering the problem formulated by the appellant, it had not been shown how the skilled person would have arrived at the claimed subject-matter. Generic references to the common general knowledge did not suffice. The granted claims therefore involved an inventive step.

XI. The appellant requested that the decision under appeal be set aside and the patent be revoked.

XII. The respondent requested that the appeal be dismissed (main request), or that the patent be maintained in amended form on the basis of any of the first to sixth auxiliary requests filed with the reply to the statement of grounds of appeal.

Reasons for the Decision

1. Admittance of G23-G27

1.1 Documents G23 to G27 were filed at the outset of the appeal proceedings by the appellant. G23, G24 and G25 are academic publications providing some prior art knowledge for the adjustment of the polydispersity index of polyolefins and address the relationship between melt flow rate, weight molecular weight and intrinsic viscosity of polypropylene compositions. G27 also discloses the relationship between the stiffness of impact copolymer compositions and their molecular weight distribution (Mw/Mn). It is apparent that these documents provide background information meant to address the question of obviousness dealt with in the passage bridging pages 9 and 10 of the contested decision. In view of that, the Board does not see any reason to hold documents G23, G24, G25 and G27 as inadmissible (Article 12(4) RPBA 2007 which applies in view of Article 25(2) RPBA 2020).

1.2 G26 is a patent document filed as alternative closest prior art document in support of an inventive step attack that was first filed by the appellant in appeal (statement of grounds of appeal, page 2, fourth paragraph and point 7.3 on pages 19 and 20). Under Article 12(4) RPBA 2007 which applies to the present case the board has a discretion to hold inadmissible facts, evidence or requests which could have been presented but were not presented in the first instance proceedings. The appellant justified the filing of G26 and of the new attack of inventive step based on that document in that they were *prima facie* highly relevant.

It is clear from the justification of the appellant however that the filing of G26 was not a direct and legitimate reaction to the proceedings before the opposition division but rather formed the basis for a new and independent attack of inventive step against the granted claims. G26, a patent document published on 8 July 2010, was publicly available long before the filing of the notice of opposition, on 25 November 2015. There is no apparent reason as to why G26 could only be filed with the statement of grounds of appeal on 8 August 2018 nor was such a reason provided by the appellant. On the contrary, if the appellant intended to submit a further inventive step attack, they should have submitted both the document and the attack based on it in opposition proceedings. In the absence of a proper justification for its filing in appeal, the Board finds it appropriate to exercise its discretion under Article 12(4) RPBA 2007 to hold G26 as inadmissible.

Main request - Claims as granted

2. While the contested decision was based on the grounds of opposition under Article 100(a) EPC (Article 56 EPC, lack of inventive step) and Article 100(b) EPC, the appellant only contested the decision of the opposition division regarding inventive step in their statement of grounds of appeal. This is therefore the only part which is to be examined.

3. Inventive step

3.1 The decision of the opposition division was based on G10 as the document representing the closest prior art (section 2.3.4 on page 8). The patent in suit and G10 are in the same field of polypropylene copolymer

compositions with impact properties for automotive interior parts (paragraph 12 of the patent in suit and paragraphs 4 and 125 of G10). The choice of G10 as closest prior art was not contested by the parties in appeal and the Board does not see any reason to deviate from the decision of the opposition division on that point.

3.2 The contested decision of the opposition division established that G10 was silent as to the polydispersity index (P.I.) of the propylene homopolymer and the intrinsic viscosity of the fraction soluble in xylene of the polypropylene compositions. With regard to samples A and F of G10 which were additionally considered as valid starting points for the assessment of inventive step by the appellant (section 7.2.4 of their statement setting out the grounds of appeal) it was additionally apparent from Table 2 of G10 that the values of carbon emission, named volatiles content in G10, were outside the range defined in granted claim 1. These distinguishing features were not in dispute between the parties in appeal nor was the conclusion of the opposition division that the patent in suit did not show that any of these features had an effect on the properties of the claimed polypropylene compositions over the compositions of samples A and F of G10.

3.3 The problem defined in the decision of the opposition division was therefore the provision of an alternative automotive interior element made of a polypropylene composition. Also this point was not contested by the parties in appeal. In the absence of any evidence for effects resulting from the distinguishing features or their combination over the closest prior art and of corresponding arguments of the parties the Board does

not see any reason to revise the problem identified in the contested decision.

3.4 In their statement of grounds of appeal the appellant submitted arguments addressing the question of whether the ranges defining the polydispersity index (P.I.) of the propylene homopolymer on the one hand and the intrinsic viscosity of the polypropylene composition on the other hand in granted claim 1 could have been achieved on the basis of the knowledge available to the skilled person.

3.4.1 With regard to the polydispersity index (P.I.) of the propylene homopolymer, the appellant argued on the basis of G12, G23 and G24 that a skilled person knew, by selection of the internal/external donors of the catalyst system, how to produce polypropylene homopolymers having polydispersity indexes (P.I.) of 4.7 to 9.2 in a predictable manner (section 5 of the statement setting out the grounds of appeal).

3.4.2 The appellant also argued on the basis of G22, G23 and G24 that the range of intrinsic viscosity of the xylene soluble fraction in granted claim 1 (2.5-4.0 dl/g) was known to be desirable to achieve improved impact properties and that the skilled person could have adjusted the intrinsic viscosity by controlling the amount of hydrogen during polymerization (section 6 of the statement setting out the grounds of appeal).

3.5 Beyond the discussion of these individual features, a central point of the decision of the opposition division was, however, that the prior art did not contain a hint towards compositions with a combination of polydispersity index (P.I.) of the propylene homopolymer and intrinsic viscosity of the

polypropylene composition in the ranges defined in granted claim 1 (sixth paragraph on page 9 of the contested decision).

3.6 It is in that respect also apparent from the discussion of inventive step in the contested decision that the polydispersity index (P.I.) of the propylene homopolymer and intrinsic viscosity of the polypropylene composition could not be assessed independently from one another and independently from all other features of claim 1. The suitability of a given polypropylene composition as material for manufacturing automotive interior elements depended on the combination of physical and chemical properties of the composition (last paragraph on page 9 of the contested decision). Also, considering that the parameters defining the composition of granted claim 1 were at least partially linked to one another, a skilled person considering the teachings of G12 concerning the polydispersity index (P.I.) and G22 concerning the intrinsic viscosity would not necessarily arrive at a composition as defined in granted claim 1 (first paragraph on page 10 of the contested decision). It is further derivable from that passage of the contested decision that the melt flow rate and the volatiles content defined in granted claim 1 could as a result vary in such a way that they would be outside their defined ranges.

3.7 This central point of the contested decision was reaffirmed as being a critical question of inventive step to be answered in appeal (sections 7.7 and 7.8 of the communication of the Board dated 6 July 2021). It was in particular identified in these passages of the Board's communication that it had yet to be shown that compositions according to granted claim 1 were

available to a skilled person and that these compositions would have been seen as alternative to the compositions according to samples A or F of G10 representing the closest prior art.

3.8 The appellant addressed that question in their statement of grounds of appeal only in that they asserted that granted claim 1 was in fact a mere aggregation of functionally defined features that were independent from one another. No prior art teaching or verifiable fact was however provided in support of that assertion. It was in particular not shown that the polydispersity index (P.I.) and the intrinsic viscosity were adjustable to values in the ranges defined in granted claim 1 in combination with the other features and properties defining the polypropylene composition of that claim such as the melt flow rates of the propylene homopolymer of component (A) and that of the polypropylene composition.

3.9 Changing specific internal/external donors in the catalyst system for the preparation of the propylene homopolymer to adjust the polydispersity index (P.I.) within the range of granted claim 1 was an option that could have been considered on the basis of the teachings of G12. It was however not shown that the selection of specific internal/external donors would have led to a propylene homopolymer still having a melt flow rate in the ranges defined for the propylene homopolymer in granted claim 1. The control of the amount of hydrogen used in the second reactor was considered by the appellant to be a means of adjusting the intrinsic viscosity of the fraction soluble in xylene of the polypropylene composition. It was again not shown that by doing so the melt flow rate of the compositions according to G10 would still be in the

range defined in granted claim 1.

3.10 In that regard the Board concludes that the critical question of inventive step addressed in the contested decision and reaffirmed in the Board's communication was not answered by the arguments of the appellant. In that regard, the Board does not see a reason to change the conclusion of the opposition division on inventive step starting from G10. Granted claim 1 is therefore inventive over G10 as the closest prior art.

3.11 Granted claim 6 concerns the use for an automotive interior element of a polypropylene composition corresponding to that of granted claim 1 but for which the values of carbon emission are not limited. The reasoning of inventive step provided for granted claim 1 applies equally to the question of inventive step of granted claim 6 since inventive step of granted claim 1 is not based on the values of carbon emission. In this respect, no additional or separate arguments were provided by the appellant.

4. As the objections maintained by the appellant in appeal are either not admitted or not successful, the appeal is to be dismissed. Since the request for oral proceedings was withdrawn by the appellant, a decision can be issued without holding oral proceedings.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

B. ter Heijden D. Semino

Decision electronically authenticated