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**Datasheet for the decision
of 20 March 2023**

Case Number: T 0382/20 - 3.3.06

Application Number: 13779661.1

Publication Number: 2906423

IPC: B32B27/00, C08J5/00, C08L23/08

Language of the proceedings: EN

Title of invention:
SEALANT COMPOSITION

Patent Proprietor:
Dow Global Technologies LLC

Opponent:
Borealis AG

Headword:
Dow/Sealant composition

Relevant legal provisions:
EPC Art. 100(b), 100(a)

Keyword:
Grounds for opposition - insufficiency of disclosure (no) -
lack of patentability (no)

Decisions cited:

Catchword:



Beschwerdekammern

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Chambres de recours

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Case Number: T 0382/20 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 20 March 2023

Appellant: Borealis AG
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 16 December
2019 rejecting the opposition filed against
European patent No. 2906423 pursuant to Article
101(2) EPC.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: S. Arrojo
J. Hoppe

Summary of Facts and Submissions

- I. The appeal was filed by the opponent contesting the decision of the opposition division to reject the opposition against European patent No. EP 2 906 423, claim 1 thereof reading as follows:

"1. A polyolefin composition suitable for sealant applications comprising:

an ethylene/ α -olefin interpolymers composition having a Comonomer Distribution Constant (CDC) in the range of from 40 to 110, vinyl unsaturation of less than 0.1 vinyls per one thousand carbon atoms present in the backbone of the ethylene-based polymer composition; a zero shear viscosity ratio (ZSVR) in the range of from 1.01 to 2.0; a density in the range of from 0.908 to 0.922 g/cm³, a melt index (I_2 at 190°C/2.16 kg) in a range of from 0.5 to 5.0 g/10 minutes, a molecular weight distribution (M_w/M_n) in the range of from 2.0 to 4.0, and tan delta at 0.1 radian/second and 190°C in the range of from 5 to 50; wherein the polyolefin composition comprises from 85 to 100 percent by weight of the ethylene/ α -olefin interpolymers composition; density is measured using ASTM D792, Method B; and melt index (I_2) is measured in accordance with ASTM D1238, Condition 190°C/2.16kg."

- II. With its statement of grounds of appeal, the appellant requested to set aside the decision and to revoke the patent, arguing that the invention was insufficiently disclosed and that claim 1 was not inventive in view of D5 (WO 2011/002986) in combination with D4 (WO 2011/002868) and D7 (US 2011/0172354 A1), D10 (Datasheet "Dow DOWLEX™ 2045"), D17 (Datasheet "Exceed

3527PA" from archive.org), D18 (Datasheet "*Exceed 3527PA*") or D19 (Declaration from Mr Sinha), or in view of D8 (WO 2011/ 146468) in combination with commercial product Dowlex 2045 (D10). It also submitted a new document D20 (Q.Yang et al, "*Alternative View of Long Chain Branch Formation by Metallocene Catalysts*", 43, *Macromolecules*, 2010) in support of insufficiency of disclosure.

- III. In its reply, the patent proprietor and respondent requested to dismiss the appeal and to maintain the patent as granted (**main request**), or as an auxiliary measure, to maintain the patent in amended form on the basis of the claims according to one of auxiliary requests 1 to 4 filed therewith. It also requested not to admit D20.
- IV. In its preliminary opinion, the board stated that none of the grounds of opposition appeared to prejudice the maintenance of the patent as granted.
- V. At the oral proceedings, which took place on 20 March 2023, the parties maintained their original requests.

Reasons for the Decision

1. Sufficiency of disclosure

The board has concluded that the ground for opposition under Article 100(b) EPC does not prejudice the maintenance of the patent as granted for the following reasons:

- 1.1 According to the patent in suit (par. [0004]), the underlying invention provides a sealant composition

offering a good balance between its physical, optical and sealant properties. Claim 1 as granted proposes to solve this problem by providing polyolefins defined in terms of seven parameters, namely the Comonomer Distribution Constant (from now on "CDC"), the density, the vinyl unsaturation, the zero shear viscosity ratio (from now on "ZSVR"), the melt index, the molecular weight distribution (from now on " M_w/M_n ") and the tan delta.

1.2 The appellant argued that the skilled person would be confronted to an undue burden when trying to adjust the above parameters to fall within the defined ranges either individually or in combination, in particular considering that the CDC, the ZSVR and the tan delta were unconventional parameters.

1.2.1 In particular the skilled person would not know how to adjust the ZSVR. Even if this parameter was considered to be linked to long chain branching, the patent did not indicate how long chain branching could be controlled. The broad information in par. [0039] to [0043] and the catalysts proposed in par. [0044] to [0049] of the patent left too many options open, as there was no indication on how the operating conditions and the catalysts should be selected in order to reproduce the parametrical ranges of the invention. Moreover, while paras. [0127] and [0128] of the patent indicated how the parameter ZSVR should be measured, they were silent as to how the parameter could be controlled.

At the oral proceedings, the appellant argued that the proprietor's indications that long chain branching could be controlled by selecting the catalyst or by adjusting the ethylene concentration in the reactor

and/or the operating temperature could not be taken into account, because this information was not in the patent. There was also no basis to conclude that a skilled person would be aware of this information, because documents E5 (Malmberg et al., "Long-chain branched polyethene polymerized by metallocene catalysts $\text{Et}[\text{Ind}]_2\text{ZrCl}_2/\text{MAO}$ and $\text{Et}[\text{IndH}_4]_2\text{ZrCl}_2/\text{MAO}$ ", *Macromolecules*, 1998), E7 (Yang et al. "Alternative view of long chain branch formation by metallocene catalysts", *Macromolecules*, 2010) or D20 were scientific articles, and therefore not representative of common general knowledge. In fact D20 reinforced the appellant's arguments, because it indicated that long chain branching was not only influenced by the choice of catalyst but also by common reactor variables and the nature of the process (see abstract). D20 also explained (see fig. 1) that molecular weight played a role in long chain branching, whereby different catalysts led to different outcomes. The skilled person was thus confronted with the undue burden of determining the value of all the process parameters which had to be adjusted to reproduce the ZSVR range as defined in claim 1 at issue.

The difficulties to reproduce the ZSVR were also illustrated by comparing the exemplary polyolefin IPC2 of the patent with the CPC2 (also in the patent) or with the polyolefin in example 1 of D9 (WO 2011/109563). While all three polyolefins had been prepared with the same catalyst, reactor configuration and temperature ranges, the ZSVR obtained for CPC2 and example 1 of D9 fell outside the claimed range, therefore raising the question of how this range had been achieved when reproducing the exemplary polyolefin IPC2.

- 1.2.2 The appellant further argued that the reproduction of the parameter CDC would also be problematic. First, there was an error in the description of the method to determine CDC, in particular in the indication in par. [0123] of the patent that for well-defined bimodal distributions, the half width (used to calculate the CDC) was calculated as "the arithmetic average of the half width of each peak". This was clearly incorrect in view of the divergence between the values for IPC7 calculated from figure 8 of the patent and those presented in the examples (see table 1B on page 18 of the patent). Moreover, the peak resolution could be affected by the accuracy of the pump in the CEF instrument, and the calibration of the column packing was also influenced by how the beads were packed (the patent indicated that class VI glass beads were used, but no information was given on how these beads were packed).
- 1.2.3 Finally, the appellant argued that even if the skilled person figured out how to reproduce the individual parameters, the patent did not explain how they could be simultaneously adjusted to fall within the claimed ranges. This was particularly challenging, as it was apparent in view of the examples of the patent that the different parameters were interdependent, i.e. modifications of one parameter could lead to unpredictable variations of the others. While the patent disclosed seven exemplary polyolefins in which these parameters were combined, only one single comonomer (1-octene) had been used in all of them. Since claim 1 at issue was not restricted to ethylene-octene polyolefins, the examples did not provide any useful information on how to reproduce polyolefins using other comonomers. The patent did therefore not

include enough information to reproduce the invention throughout the entire scope of the claim.

- 1.3 The board disagrees with these arguments for the following reasons:
 - 1.3.1 The adjustment of the ZSVR is not considered to involve an undue burden because according to par. [0127] of the patent, ZSVR is the ratio of the viscosity of the branched polyethylene with respect to that of the linear polyethylene at the equivalent weight average molecular weight. The board agrees with the respondent in that this parameter is associated with long chain branching, as it is well known that zero shear viscosity increases with long chain branching. This parameter can therefore be increased (from a minimum value of 1) by promoting branching reactions during the preparation of the polyolefin.

As pointed out by the respondent, documents E5 (page 8448, right col.), E7 (page 8839, 1st par. of "Results and Discussion") and D20 (page 8836, left col.) indicate that it is well known in the art that polymer branching can be controlled by selecting appropriate catalysts and by adjusting the temperature and/or the concentration of ethylene in the reactor (i.e. higher temperatures and/or lower ethylene concentrations leading to higher branching and vice-versa). While the board agrees with the appellant in that the content of scientific articles is generally not representative of common general knowledge, the information in the cited passages of E5, E7 and D20 is clearly presented as part of the background knowledge in the field. Moreover, the alleged dependency between the temperature, ethylene concentration and ZSVR is coherent with the observed differences between the exemplary embodiment of the

invention IPC2 and the comparative example CPC2 or the example 1 of D9. In particular, the exemplary embodiment IPC2 is prepared with lower temperatures and higher ethylene concentrations than those used for CPC2 or example 1 of D9 (120 and 175°C for IPC2 vs. 150 and 190°C for CPC2; 17 and 9.3 g/L ethylene at the exit for IPC2 vs. 5.0 and 8.4 g/L for CPC2, as shown in table 2B of the patent; example 1 of D9 only discloses the temperatures, which are 140 and 190°C according to table 1 on page 32). The board therefore concludes that a person skilled in the art would be able to adjust the long chain branching of the polymer and therefore the value of ZSVR using common general knowledge and without an undue burden.

- 1.3.2 In the board's view, the adjustment of the CDC would also not involve an undue burden. The appellant is right in that the description of the method for measuring the CDC in embodiments having a well-defined bimodal distribution (see last lines of par. [0123] of the patent) is incorrect. In this respect, the board disagrees with the respondent in that the erroneous expression "the arithmetic average of the half width of each peak" should be interpreted as "the sum of the half width of each peak", as there is no reason to conclude that a skilled person would necessarily resolve the contradiction between the information in par. [0123] and the values in table 1B of the patent by concluding that the former is the erroneous one and the latter the correct one, let alone that this would lead to the conclusion that the half widths of the peaks have to be added. However this issue, as well as any possible divergence resulting from small variations in the peak resolution and/or the calibration of the column, does not lead to a problem of sufficiency of disclosure, but to a problem of demarcation under

Article 84 EPC. In other words, while the erroneous description of the method to measure the CDC might hinder the skilled person from recognising whether certain embodiments fall within the defined range of CDC (in particular those with a well-defined bimodal distribution covered by the erroneous instruction in par. [0123]), the invention could still be carried out by a person skilled in the art, as this would simply involve calculating the CDC following the methods according to the instructions in the patent in suit (even if some of them are unclear or erroneous), as the appellant did in its grounds of appeal when calculating CDC in different ways.

- 1.3.3 The board has finally concluded that the combined adjustment of the parametrical ranges in claim 1 would also not involve an undue burden, because the patent includes detailed instructions (par. [0068] to [0088] and tables 2A, 2B and 2C) on how to prepare seven exemplary polyolefins in accordance with the invention. Furthermore, in opposition proceedings it is the opponent who carries the burden of proof to demonstrate that the invention as granted is insufficiently disclosed unless there are substantial doubts that at least some forms of the invention would not be reproducible. In the present case, no evidence has been submitted to demonstrate that the adjustment of the multiple parameters in claim 1 would represent a technical challenge. There is also no evidence on file, be it in form of experiments or even as a theoretical discussion, explaining why the reproduction of embodiments including comonomers different from octene would involve an undue burden, or why the determination of the operating factors and/or the simultaneous adjustment of the multiple parameters to fall within the claimed ranges would involve a technical challenge

for a person skilled in the art. In this respect, document D20 cited by the appellant simply indicates that polymerisation reactions are not only affected by the selected catalyst but also by other operating parameters, a fact which is not contested but which does not point to any specific technical challenge. The board does not deny that the appellant's argument is technically plausible, since it is clear that adjusting several parameters to fall within certain ranges could require extensive experimentation, but the mere plausibility of the argument without evidence of a concrete situation that would pose a technical challenge cannot shift the burden of proof in this respect back to the proprietor, especially considering that the patent discloses several successful examples. The board therefore considers that in this context the adjustment of the various parameters required by claim 1 would not involve an undue burden.

- 1.4 In view of the above considerations, the board concludes that the appellant has not demonstrated that the invention is insufficiently disclosed. Since the content of document D20 does not affect the conclusion on the question of sufficiency of disclosure, there is no need to address the admittance of this document.

2. Main request - Inventive step

The board has concluded that the ground for opposition under Article 100(a) EPC in combination with Article 56 EPC does not prejudice the maintenance of the patent as granted for the following reasons:

2.1 Closest prior art

The appellant proposed documents D5 or D8 as possible starting points.

- 2.1.1 Document D5 discloses ethylenic polymers which may be used as part of a multilayer film for sealing purposes (see par. [0054] and [0056]), said polymers having a melt index of 0.5 to 15, a ZSVR of 1.3 to 2.3 and a M_w/M_n of 2.0 to 2.4 (see par. [0007]), all of these anticipating the corresponding parameter ranges in claim 1 at issue. Furthermore this document teaches (par. [0005]) that vinyl unsaturation is disadvantageous (so it must be kept low).

On the other hand, according to claim 1 in D5 the density of the ethylenic polymer is "not more than 0.905 g/cm³", therefore lower than the range of 0.908 to 0.922 g/cm³ defined in claim 1 at issue. Furthermore, there is no indication in D5 of the value of the parameters CDC and tan delta.

- 2.1.2 Document D8 (example 1) discloses a polyethylene copolymer having a CDC of 127.9 (table 5), a vinyl unsaturation per 1000 of 0.055 (table 4), a melt index of 0.79 g/10 min (table 2) and a M_w/M_n of 2.90 (table 7). As correctly pointed out by the respondent, the density of the inventive polymer in D8 is not the one shown in table 3 (corresponding to the "Resin A" used as skin layer) but the one in table 2, which is 0.904 g/cm³, thus lower than the range defined in claim 1 at issue.

The opposition division argued that D8 should be disregarded as closest prior art, because the polymer according to example 1 was used as the core layer and not as a sealant. The respondent further indicated that D8 explicitly concerned films for a stretch hood, so

this document would not be considered as a valid starting point for the underlying invention concerning a sealant polymer.

The board disagrees that D8 should be disregarded as starting point, because while it primarily focuses on films for a stretch hood, it explicitly indicates (page 7, 2nd par.) that "the inventive ethylene-based polymer composition may be employed as a sealant resin". Moreover, even though the fact that the exemplary polymer in D8 is used as a core layer represents an indication that this document might be a less promising springboard than D5, this difference does not disqualify D8 as a possible starting point.

The subject-matter of claim 1 thus differs from the resin in D8 in that the density is higher (at least 0.908 g/cm^3), the CDC is lower (40 to 110 vs. 127.9 in D8) and in that the proposed ranges for the tan delta and the ZSVR are not disclosed in D8.

2.2 Problem solved according to the patent

2.2.1 Paragraph [0004] indicates that the invention aims at providing sealant polyolefins offering a good balance between the sealant, physical and optical properties. To demonstrate this, the patent compares seven exemplary polyolefin compositions (IPC1 to IPC7 described in par. [0068] to [0088]) with two comparative polyolefin compositions (CPC1 and CPC2 described in par. [0089] to [0091]). The polymers are characterised in terms of the parameters defined in claim 1 (see tables 1A and 1B on pages 17-19) and are tested for different physical, optical and sealant properties as monolayers and as part of multilayer films (see tables 6A and 6B on pages 31-32).

2.3 Problem solved starting from D5 as closest prior art

2.3.1 The opposition division concluded that the examples in the patent did not validly demonstrate that a technical effect was obtained with respect to D5. In particular, the division noted that CPC2 (the most representative comparative example for the polyolefins in D5) differed from the inventive compositions both in the ZSVR and in having a higher density, so it was not possible to determine which of these aspects gave rise to the observed effects. The polyolefin in D5 fell within the ZSVR range in claim 1, so it could not be concluded whether the effect would still be obtained as a result of the other differences, such as the higher density. The only problem solved with respect to D5 was therefore the provision of an alternative polyolefin composition.

2.3.2 While this argumentation was contested by the respondent, who considered that the examples of the patent demonstrated that the inventive polyolefins at least provided an alternative having a good balance between sealant, physical and optical properties, the board will assume for the sake of the argument (in the appellant's favour) that the problem solved with respect to D5 is the provision of an alternative polyolefin composition.

2.4 Non-obviousness starting from D5 as closest prior art

2.4.1 The appellant argued that the density of 0.905 g/cm³ or lower in claim 1 of D5 was not based on any technical consideration and that this feature was not an essential aspect in that document. Although par. [0036] of D5 indicated that the invention concerned polymers having a "relatively low density", it was clear when

reading this passage that the essential combination of features providing the desired effects were those described under points (A) and (B). There was thus no disincentive for the skilled person to contemplate polyolefins having higher densities.

Document D5 further disclosed (par. [0056]) that the inventive polymers could be used alone or in blends, wherein the concept "blend" included micro-level combinations within the same reactor (see par. [0011]). According to par. [0048], the components of such blend could include polymers of high density such as HDPE (with a density of 0.940 g/cm³ or higher). A skilled person would thus deduce therefrom that D5 also contemplated polymers having higher densities, in particular those resulting from micro-level blends with high density polymers.

Document D4 disclosed polyolefins having a density falling within the claimed range (see table on page 34) and related to the same kind of films as D5 (see D4, page 6, lines 7-10 and page 7, line 25). This document having furthermore been filed on the same day and by the same applicant as D5, it was obvious for a skilled person to consider incorporating aspects of D4 into the polyolefin of D5. More specifically, since the problem solved by the invention was simply that of providing an alternative and D5 explicitly taught using blends of polymers having higher densities, it was obvious in view of the polymers in D4 to contemplate alternatives with a density falling within the scope of claim 1.

The additional parametrical ranges not anticipated in D5 could not provide an inventive step, as they were not associated with any specific technical effect and were known from D7, D10 or D17 to D19.

The appellant thus concluded that the subject-matter of claim 1 was obvious in view of D5 alone or in combination with D4 and D7, D10 or D17 to D19.

2.4.2 The board is not convinced by the above argumentation for the following reasons:

The definition of a maximum density of 0.905 g/cm^3 in claim 1 of D5 is based on technical considerations, as it is explicitly indicated in par. [0036] that the invention concerns polymers of relatively low density. More specifically this low density is intended to achieve a low hot tack initiation temperature (see par. [0006]). While the "unique combination" of the invention (i.e. the features giving rise to the desired technical effect) in D5 is, as the appellant pointed out, provided by features (A) and (B) described in paragraph [0036], it is apparent (also in view of par. [0036] and of the subject-matter of claim 1) that this combination is applied within the specific technical context of ethylenic polymers having a relatively low density. In other words, the low density is an essential aspect of the invention in D5, not because it is part of the proposed solution, but because it defines the technical context in which this solution should be applied. The low density defined in claim 1 of D5 therefore represents an explicit disincentive to consider polyolefins of higher densities, as such modifications would imply departing from the essential technical context of this document. The argumentation of the appellant thus fails from the outset, because a skilled person starting from D5 would not contemplate increasing the density of the polyolefin to values falling within the scope of the invention.

The board also notes that the proposed micro level blends and the reference to high density polymers such as HDPE in D5 would not necessarily lead to polymers falling within the claimed range, as this would require combining specific alternatives from different lists in D5 (e.g. micro level blend in par. [0011] and HDPE in par. [0048]). In fact, even if these elements were combined, there is no basis to conclude that a polymer having a density higher than 0.9088 g/cm^3 would be obtained, as the blends would arguably be configured to result in polymers falling within the technical context of the invention in D5, namely with a density of not more than 0.905 g/cm^3 as defined in claim 1 of this document.

The board does also not agree that the filing of D4 and D5 by the same applicant and on the same date and/or the fact that both documents relate to similar subject-matter would represent an incentive to combine their teachings. If anything, the separate filing on the same day by the same applicant rather indicates that there was no intention to combine the contents of these documents. In any case, as argued by the respondent, it is not realistic to conclude that the skilled person would incorporate the density of the polymers in D4 into the polyolefin of D5 without also modifying other aspects related to the density such as the ZSVR, so there is no reason to conclude that a polyolefin resulting from the combination of D5 with D4 would necessarily fall within the scope of claim 1 at issue.

- 2.4.3 Since the inventive step objection starting from D5 already fails on the basis that the skilled person would not contemplate modifying the density of the polymer in this document to values falling within the claimed range, there is no need to address the question

of whether it would have been obvious to adjust the other parameters of the composition in D5 in view of the teachings of D7, D10 or D17 to D19.

2.4.4 For the sake of completeness, the board also notes that arguing that there is a disincentive to depart from the essential or basic technical context of a document does not imply that a closest prior art cannot be modified beyond its explicit disclosure, but simply that it is normally unrealistic (even when the only problem solved is that of providing an alternative) to conclude that a skilled person would consider modifications which directly contradict the technical context of the closest prior art. It is still possible to consider changing aspects which are not specified or which are presented as optional, or even modifications of the proposed technical solution, provided that the prior art contains an incentive to do so. However, the conclusion that a skilled person would choose to start from a certain document as closest prior art and subsequently modify the very technical context of that document without a specific reason to do so is generally a strong indication that the argument is contaminated by hindsight.

2.4.5 The subject-matter of claim 1 is therefore not rendered obvious by D5 taken alone or in combination with D4 and/or D7, D10 or D17 to D19.

2.5 Problem solved starting from D8 as closest prior art

2.5.1 At the oral proceedings, the appellant further argued that the ranges defined in the patent were arbitrarily selected. The results shown in table 6A of the patent indicated that some of the observed properties were very similar or even better in the comparative

examples. In any case, the advantageous properties were only obtained for a narrow range which could not be extrapolated to the entire scope of the claim. The problem solved with respect to D8 was therefore the provision of an alternative polyolefin composition.

- 2.5.2 The board first notes that the arguments brought forward by the appellant in the discussion of the problem solved with respect to D5 do not apply when document D8 is taken as the closest prior art, because claim 1 also differs from this document in the value of ZSVR.

Furthermore, the exemplary embodiments IPC1 to IPC7 differ from CPC2 at least in that the density is higher and in that the ZSVR falls within the claimed range (see tables 1A and 1B). Since claim 1 also differs from D8 at least in these parameters, it is reasonable to consider that when D8 is taken as the closest prior art the invention would provide the same effects as those observed in the examples of the patent. According to tables 6A and 6B of the patent, the monolayer of the CPC2 polymer (CMBF2) shows good properties in terms of Dart B and Elmendorf tear MD. However, the 2% secant modulus of CPC2, which measures the stiffness of the monolayer, is significantly lower (30% lower or more) than that of the monolayers of the inventive polymer. The UHT strength and the hot tack at 130°C is also higher for all the laminates including the inventive polymer (ILS1 to ILS7) with respect to the laminate containing the comparative polymer CPC2 (CLS2). Also, in all but one of the seven inventive monolayers (IMBF1 to IMBF7) the total haze is lower than in the comparative monolayer (CMBF2), and the only exemplary polyolefin having a higher haze (IMBF6) also provides a much higher stiffness (+96%) and improved physical

properties (except for a smaller Dart B). The board therefore concludes that the tests in the patent validly demonstrate that the proposed solution with respect to D8 (i.e. a higher density and a ZSVR falling within the proposed range) provides the technical effect of achieving a polyolefin with a good balance between the physical, optical and sealant properties. While in view of the erroneous definition of part of the method to determine CDC, the scope of demarcation of this parameter appears to be diffuse and therefore unsuitable to demonstrate a technical effect, in the underlying case this parameter can be disregarded because it is not one of the differentiating features between CPC2 and the inventive polyolefins (i.e. it can be assumed that the observed effects are associated with the other parameters).

In view of the above, the board considers that the problem solved with respect to D8 is to provide an alternative polyolefin having a good balance between the physical, optical and sealant properties.

2.6 Non-obviousness starting from D8 as closest prior art

2.6.1 The appellant argued that the skilled person would arrive at the claimed invention starting from D8, because the missing parametrical ranges could not be associated with any unexpected effect and were thus arbitrary selections. The skilled person would therefore contemplate different alternatives in view of the cited prior art (e.g. document D10) and in doing so would arrive at the claimed subject-matter in an obvious way.

2.6.2 As indicated above, the problem solved when starting from D8 is that of providing an alternative sealant

polyolefin with a good balance between physical, optical and sealant properties. The appellant has not referred to any passage of D10 or any other cited document providing a direct or indirect indication that the proposed ranges would contribute to solve the above cited technical problem. The board has also found no teaching in the cited documents (e.g. D7, D10, D10a, D10b, D17, D18, D19 or D20) which could (let alone would) lead the skilled person to consider adjusting the density and the ZSVR in D8 to the values as defined in claim 1 in order to solve this technical problem.

2.6.3 In the board's view, already for these reasons the subject-matter of claim 1 is not rendered obvious by D8 taken alone or in combination with D10 or the other cited documents.

2.7 It follows from the above considerations that the subject-matter of claim 1 (and by the same token those of claims 2 to 11, which define at least the same limitations as claim 1) is considered to be inventive in view of the cited documents taken alone or in combination; the invention therefore meets the requirements of Article 56 EPC.

3. Since none of the grounds for opposition invoked by the appellant prejudices the maintenance of the patent as granted, the board concludes that the appeal does not succeed. In view of this conclusion there is no need to deal with the auxiliary requests filed by the proprietor. Moreover, since the content of document D20 does not affect the outcome of the proceedings, there is no need to address the question of its admittance.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated