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**Datasheet for the decision  
of 6 April 2022**

**Case Number:** T 2060/20 - 3.3.06

**Application Number:** 15702865.5

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**IPC:** B32B27/22, B32B27/30, C08K5/00,  
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**Language of the proceedings:** EN

**Title of invention:**  
SURFACE COVERING WITH A BIO-BASED PLASTICIZER

**Applicant:**  
Novalis Holdings Limited

**Headword:**  
SURFACE COVERING WITH A BIO-BASED PLASTICIZER /Novalis  
Holdings Limited

**Relevant legal provisions:**  
RPBA 2020 Art. 13(2)  
EPC Art. 56, 123(2), 84

**Keyword:**

Amendment after summons - taken into account (yes)

Inventive step - unexpected improvement shown

Amendments - allowable (yes)

Claims - clarity (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 2060/20 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 6 April 2022**

**Appellant:** Novalis Holdings Limited  
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Wanchai (CN)

**Representative:** Grünecker Patent- und Rechtsanwälte  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 16 July 2020  
refusing European patent application No.  
15702865.5 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** S. Arrojo  
**Members:** P. Ammendola  
S. Fernández de Córdoba

## Summary of Facts and Submissions

I. This appeal was filed by the applicant (hereinafter, the **appellant**) against the decision of the examining division to refuse European patent application 15702865.5 (internationally published as WO 2015/106095).

In the decision under appeal the examining division found, *inter alia*, that the claims of the 6<sup>th</sup> auxiliary request (filed during the oral proceedings) complied with the requirements of Articles 123(2) and 84 EPC and that their subject-matter was not anticipated in the prior art (Article 54 EPC). However, the subject-matter of claim 1 of this request was found to lack an inventive step (Article 56 EPC) in view of the combination of the prior art disclosed in **D7** (US 2010/319282 A1) with the teachings in **D8** (US 2008/0200595 A1), **D5** (www.tootoo.com: "Chloro-methoxy fat diethylene glycol dinitrate" 17 January 2010, XP055184142) and **D6** (US 2010/010127 A1). In the appealed decision reference was also made, *inter alia*, to **D1** (US 2012/0214920 A1) and **D2** (WO 2013/055961 A1).

II. With the statement of the grounds of appeal, the appellant filed two sets of claims labelled as main request and auxiliary request:

- the main request was substantially identical to the 6<sup>th</sup> auxiliary request considered in the decision under appeal,
- the auxiliary request comprised only four claims, of which claim 1 was also identical to claim 1 of the 6<sup>th</sup> auxiliary request.

With the statement of grounds of appeal, the appellant also filed new experimental data **D10** and requested oral

proceedings in case the board would not allow the main request.

- III. With communication of 28 October 2021, the board summoned the appellant to oral proceedings to be held on 31 March 2022.
- IV. The board issued a communication pursuant to Article 15(1) RPBA 2020 dated 19 January 2022 (hereinafter the **preliminary opinion**), wherein in point 3 it stated, *inter alia*, that there was no reason for disregarding D10 filed with the statement of grounds of appeal, because "the experimental data in D10 represent a reaction to the reasons in point 13 of the decision under appeal".

In point 5 of the preliminary opinion, the board indicated that "the evidence provided in D10 only renders plausible a non-obvious solution of an aimed technical problem for the portion of claim 1 (identical in the main request and in the auxiliary request) relating to PVC based polymers".

- V. The appellant replied thereto with letter of 17 March 2022 filing as new main request (hereinafter **main request**) a set of three claims which read as follows (the amendments vis-à-vis claims 1, 3 and 12 of the 6<sup>th</sup> auxiliary request considered in the decision under appeal highlighted by the board):

"1. A surface covering comprising:  
a polymer, wherein the polymer is polyvinyl chloride;  
a bio-based plasticizer, wherein the bio-based plasticizer is chloro-methoxy fat diethylene glycol

*dinitrate, said bio-based plasticizer being 25-40 parts per 100 parts of the polymer; a stabilizer selected from the group consisting of organocalcium, organozinc, organobarium or a combination thereof, said stabilizer being 1-2 parts per 100 parts of the polymer; and a co-stabilizer which is an epoxidized polyglyceride, said co-stabilizer being 1.5-7 parts per 100 parts of the polymer."*

*"~~23~~. The surface covering of claim 1, wherein the polymer is present in the form of a layer having the bio-based plasticizer and cork, wherein the cork is granulated cork homogeneously dispersed throughout the layer of the polymer."*

*"~~312~~. The surface covering of claim ~~23, 6 or 11~~, wherein the cork in the first layer, the cork in the second layer, and/or the cork in the third layer is 35-70 parts per 100 parts of the polymer, of the polymer in the second layer, and of the polymer in the third layer of the polymer, respectively."*

With the same letter of 17 March 2022, the appellant also renumbered the main request and the auxiliary request filed with the statement of grounds of appeal respectively as **auxiliary request 1** and **auxiliary request 2**.

VI. The board cancelled the oral proceedings.

VII. The appellant's final requests are that the decision of the examining division be set aside and a patent be granted on the basis of claims 1 to 3 according to the main request submitted with letter of 17 March 2022 or,

alternatively, on the basis of the auxiliary requests 1 or 2 filed with the statement of grounds of appeal.

## **Reasons for the Decision**

### *Procedural issues*

1. The board finds that the experimental data in D10, filed with the statement of grounds of appeal, manifestly address the reasoning of the examining division in point 13 of the decision under appeal. Hence the board, exercising its discretion under Article 12(4) RPBA 2020 (see Articles 24(1), 25(1) RPBA 2020), decides not to disregard D10.
2. Pursuant to Article 13(2) RPBA 2020, any amendment to a party's appeal case made after the notification of a summons to oral proceedings shall, in principle, not be taken into account unless there are exceptional circumstances.

The main request was filed after the appellant had been summoned to oral proceedings and had received the board's preliminary opinion (see III to V above).

The board notes the following:

- (a) the present appeal case is ex-parte;
- (b) the only substantial amendment distinguishing claim 1 of the main request from that of the 6<sup>th</sup> auxiliary request considered in the decision under appeal (see V above) - and, thus, also from claim 1 of both requests previously filed in the appeal procedure (see II above) - is that the "*polymer*" ingredient in claim 1 of the main request is restricted to polyvinyl chloride (hereinafter also

**PVC**) and, hence, such amendment manifestly addresses the board's preliminary opinion on the limited relevance of the data in D10 (see IV above), and

- (c) the set of claims of the main request manifestly solves all issues raised by the board.

Since the above mentioned argument concerning D10 was raised for the first time in the board's preliminary opinion, the new main request, which was filed less than 2 months after the preliminary opinion and clearly addresses this objection, represents a legitimate and timely reaction from the appellant.

The board therefore considers that there are exceptional circumstances which justify the admission of the new claims and thus decides to take into consideration the main request under the provisions of Article 13(2) RPBA 2020.

#### *Main request*

### 3. Compliance with Articles 123(2) and 84 EPC

3.1 The board preliminarily notes that the application as filed is mostly devoted to the disclosure of a surface covering composition (hereinafter **SC composition**) that comprises polymer, bio-based plasticizer, stabilizer and co-stabilizer (see in particular original claim 1 and the examples of the application). Moreover, it is already apparent from original claims 3 and 5 to 10 and the corresponding passages in the description of the patent application that:

- the broadest amount range disclosed for the bio-based plasticizer is 25-40 parts per 100 parts of the polymer;



- the broadest amount range disclosed for the 1-2 parts stabilizer is 1-2 parts per 100 parts of the polymer;
- the broadest amount range disclosed for the co-stabilizer is 1.5-7 parts per 100 parts of the polymer;
- the most preferred polymer is PVC;
- the most preferred bio-based plasticizer is chloromethoxy fat diethylene glycol dinitrate;
- the most preferred stabilizer is selected from the group of organometallic stabilizers consisting of organocalcium, organozinc, organobarium, organotin or a combination thereof, and
- the most preferred co-stabilizer is an epoxidized polyglyceride.

Therefore, in the board's view, claim 1 of the main request finds a basis in the above disclosure of the application as filed.

Further pointers to the combination of features in claim 1 can be found in:

- original claim 34 (which refers back to original claim 33 and, thus, also to original claim 32) with the exception that in present claim 1 "*organotin*" has been deleted from the list of (organometallic) stabilizers,
- original claim 36 (which refers back to original claim 35, and, thus, also to original claim 33),
- the disclosure of PVC as most preferred polymer in paragraphs [0012] and [0029] of the original application, and
- the disclosure of chloro-methoxy fat diethylene glycol dinitrate as the most preferred bio-based plasticizer in paragraph [0016] of the original application.

As to the absence in claim 1 at issue of the option "*organotin*" defined in the list of organometallic stabilizer of original claim 8 (or claim 34), the board concurs with the reasoning in point 10 of the decision under appeal (concerning claim 1 of the 6<sup>th</sup> auxiliary request pending before the examining division) that since the list of organometallic stabilizers in the original claim(s) had a certain length, the deletion therefrom of the "*organotin*" option does not result in the explicit disclosure of any new subject-matter.

Claim 2 of the main request is manifestly based on a combination of original claims 38 and 39 with the original disclosure supporting claim 1 (while claim 39 erroneously refers back to claim 40, for the board it is clear that this claim is dependent on claim 38). Despite the fact that claims 38 and 39 as filed are not dependent on original claim 1, it is apparent in view of the examples of the application (see example III) that the granulated cork is intended to be used in surface coverings including the components defined in original claim 1.

Claim 3 is based on original claim 40 in combination with the original disclosure supporting claim 1.

Hence, the wording of the claims of the main request is found not to add subject-matter extending beyond the content of the application as filed and, thus, the main request complies with the requirements of Article 123(2) EPC.

- 3.2 The board is also satisfied that the wording of the claims of the main request is clear, concise and

supported by the description, as required by Article 84 EPC.

4. Novelty (Article 54 EPC)

The board notes that the examining division correctly found that neither D2 nor D8 discloses the use of chloro-methoxy fat diethylene glycol (see point 12 of the decision under appeal) and, thus, concluded that the subject-matter of claim 1 of the then pending 6<sup>th</sup> auxiliary request was novel.

Present claim 1 results from a restriction of such claim (to PVC as polymer, see V above) and the board sees no reason to come to a different conclusion in respect of present claim 1.

Thus, the subject-matter of the claims of the main request is found to comply with Article 54 EPC as well.

5. Inventive step (Article 56 EPC): claim 1

5.1 Closest prior art

The board notes that the appellant did not dispute the examining division's finding that D7 represents the closest prior art (concerning claim 1 of the then pending 6<sup>th</sup> auxiliary request, see point 13 of the decision under appeal).

In view of the fact that, similarly to D7, also present claim 1 relates to SC compositions containing plasticizer and PVC, the board sees no reason to come to a different conclusion. In particular, the closest prior art can be more specifically identified in the disclosure in paragraph [0040] of D7 of a blend (for

forming a layer in a floor panel) of PVC with an unspecified plasticizer, that comprises 40 to 120 parts of plasticizer per 100 parts of PVC.

5.2 Technical problem addressed in the patent application

The present application explicitly indicates (see paragraph [0007]) that the technical problem addressed by the invention is the provision of SC compositions in which phthalate ester plasticizers (acknowledged in the preceding paragraphs as being a conventional yet problematic plasticizer for PVC based SC compositions) are replaced with bio-based, renewable plasticizers.

However, the board also notes that paragraphs [0012] and [0013] of the application specifically relate to the embodiments of the claimed invention based on PVC. In particular, the passage in original paragraph [0013] indicates: "*[g]ood balance of porosity, bulk density and molecular weight are important for a wide range of processing ability and formulation flexibility as well as good physical & mechanical properties of plasticized products*" (emphasis added by the board).

In this respect, table 4 on page 12 of the application compares several physical and mechanical properties of an embodiment of the SC composition of the invention with those of a comparative example comprising phthalate plasticizer, and concludes that the reported elongation of the example according to the invention is superior to that of the comparative example.

Hence, the board finds that the present application also addresses (at least implicitly), *inter alia*, the more specific technical problem of rendering available SC compositions based on PVC, which not only comprise

bio-based, renewable plasticizers but also display particularly high elongation. This more specific technical problem is referred to hereinafter as **the relevant technical problem**.

### 5.3 The solution

The solution to the relevant technical problem offered by claim 1 of the main request is a PVC-based SC compositions comprising in the specified relative amounts:

- chloro-methoxy fat diethylene glycol dinitrate as plasticizer,
- an (organometallic) stabilizer selected from the group consisting of organocalcium, organozinc, organobarium or a combination thereof and
- an epoxidized polyglyceride as co-stabilizer.

It is therefore apparent that the claimed SC composition differs from the closest prior art not only in the use of a bio-based, renewable plasticizer as specified in present claim 1, but also in the presence of a specific stabilizer and co-stabilizer in certain amounts as also defined in claim 1 at issue.

### 5.4 The success of the solution

The appellant submitted D10 to demonstrate the advantageous properties of the SC composition of the invention.

#### 5.4.1 The board first notes that the addition of stabilizers or co-stabilizers to PVC compositions may be expected to provide, *inter alia*, good mechanical properties. This is also acknowledged by the appellant (see the

statement of grounds of appeal page 5, lines 7 to 11 in combination with page 7 lines 11 to 16).

The board notes however that the pairs of elongation values (in machine and cross-machine directions) reported in Table A on page 6 of D10 respectively for the two examples in accordance with present claim 1, i.e. 2205B and 2205C (containing 5 parts co-stabilizer and 1.5 parts of organometallic stabilizer per 100 parts PVC), are surprisingly superior (in at least one or both directions) to those obtained with a similar composition in which the amount of stabilizer is higher than that required in claim 1 (see sample 2205A, containing 5 parts of the same co-stabilizer but 3 parts of organometallic stabilizer). The same is also apparent in view of Table B of D10, when comparing the examples 2822B and 2822C according to the invention (containing 5 parts of co-stabilizer and 1.5 parts of organometallic stabilizer per 100 parts PVC) with a similar composition in which the amount of stabilizer is higher than that required in claim 1 (see sample 2822A, containing 5 parts of co-stabilizer but 2.5 parts of organometallic stabilizer).

Hence, the board finds that D10 renders it plausible that a comparatively high elongation is achieved by the subject-matter of claim 1.

Thus, the board concludes that the data of D10 render plausible that the subject-matter of claim 1 successfully solves the relevant technical problem.

## 5.5 Inventive step

### 5.5.1 In view of the above, the assessment of inventive step in the present case boils down to the question of

whether a skilled person would find teachings in the available prior art suggesting that the presence of the specific organometallic stabilizer and co-stabilizer recited in claim 1 in the required respective amounts, would provide particularly good mechanical properties, such as a high elongation.

- 5.5.2 The examining division referred to the combination of D7 with D6 (see second paragraph on page 11 of the appealed decision) as rendering obvious the combined use of the organometallic stabilizer and of the ingredient defined in claim 1 as co-stabilizer.
- 5.5.3 The board first notes that in D6 the ingredient defined in claim 1 as co-stabilizer is acknowledged to act as both bio-plasticizer and stabilizer (see paragraph [0005] of D6) and that this prior art only discloses (see Table 3 of D6) compositions containing 0.5 parts of organometallic stabilizer in combination with 30 to 70 parts of an ingredient that is acknowledged to also act as a further stabilizer.

Hence, the board finds that the disclosure of D6 does not provide any explicit or implicit indication that a particularly high elongation can be achieved by adjusting the amount of organometallic stabilizer as defined in present claim 1.

- 5.5.4 The board further notes that D1 and D2, which also mention organometallic stabilizers for PVC-based compositions, only disclose specific PVC-based compositions containing 2.5 part of organometallic stabilizer per 100 parts of polymer (see Table 1 of D1 and Table 2 of D2), i.e. an amount of organometallic stabilizer again falling outside the presently claimed range for this ingredient.

5.5.5 Therefore, the board finds that the available prior art referring to PVC-based compositions comprising organometallic stabilizers does not include any teachings which would lead the skilled person to expect a particularly high elongation when the relative amount of organometallic stabilizer falls in the range recited in claim 1 under consideration.

Hence, the effect provided by the presence of this ingredient in the SC composition of claim 1 at issue is surprising also when considering the cited prior art.

5.6 The board concludes that the subject-matter of claim 1 offers a solution to the relevant technical problem that is not obvious in view of the prior art and, thus, complies with the requirements of Article 56 EPC.

6. As the remaining two claims of the main request define preferred embodiments of the SC composition of claim 1, their subject-matter is found to comply with Article 56 EPC for the same reason given above for 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 examining division with the order to grant a patent with claims 1 to 3 of the main request filed with letter dated 17 March 2022 and a description to be adapted thereto.



The Registrar:

The Chairman:



A. Pinna

S. Arrojo

Decision electronically authenticated