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**Datasheet for the decision
of 14 March 2019**

Case Number: T 0066/16 - 3.3.03

Application Number: 08717647.5

Publication Number: 2118169

IPC: C08L63/00, C08G65/02, C08F2/46,
C08J3/28

Language of the proceedings: EN

Title of invention:
CURABLE COMPOSITION

Patent Proprietor:
3D Systems, Inc.

Opponent:
DSM IP Assets B.V.

Relevant legal provisions:
EPC Art. 54, 56, 100(b), 111(1), 123(2)

Keyword:
Amendments - allowable (yes)
Grounds for opposition - insufficiency of disclosure (no)
Novelty - (yes)
Appeal decision - remittal to the department of first instance
(no)
Inventive step - (yes)



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Case Number: T 0066/16 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 14 March 2019

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 12 November
2015 revoking European patent No. 2118169
pursuant to Article 101(3) (b) EPC.**

Composition of the Board:

Chairman D. Semino
Members: O. Dury
R. Cramer

Summary of Facts and Submissions

- I. The appeal by the patent proprietor lies from the decision of the opposition division posted on 12 November 2015 revoking European patent No. 2 118 169, which was granted in respect of European patent application 08 717 647.5, filed on 12 March 2008 as international application EP2008/052901, published as WO 2008/110564 (hereinafter D1a) and claiming priority from EP 07005266.7 (filed on 14 March 2007; hereinafter referred to as D1b).
- II. A notice of opposition to the patent was filed requesting revocation of the patent in its entirety.
- III. In the contested decision the following documents were, in addition to D1a and D1b, *inter alia* cited:

D2a: WO 2007/124911

D2b: US 60/796 197 (first priority of D2a)

D3: WO 01/95030

D5: WO 01/92415

The contested decision was based, *inter alia*, on the main request filed with letter dated 21 November 2013, which is the sole request dealt with by the opposition division which is relevant for the present decision.

Claims 1 and 7 to 9 of said main request read as follows (in claims 1 and 9, additions as compared to claims 1 and 17, respectively, of the application as filed are indicated in bold, deletions in ~~striketrough~~):

"1. ~~€~~**Photocurable composition for rapid prototyping** comprising:

(a) an **epoxy** resin composition being liquid at 23°C and comprising monomers or oligomers or a mixture of monomers and oligomers polymerizable by a ring-opening reaction;

(b) an impact modifier containing one or more block copolymers having at least one block composed of methyl methacrylate ~~and~~

(c) one or more polymerization **photo**initiators

(d) a mono- or polyfunctional (meth)acrylate compound

(e) a polyol component, or a polyol- containing mixture."

"7. Method for the preparation of a curable composition according to any of the claims 1 to 6 the method comprising the steps of

(A) heating the monomers and/or oligomers of component (a) to a temperature above 23°C;

(B) adding the impact modifier (b) and

(C) cooling down the obtained mixture and adding the (meth)acrylate (d) and polymerization photoinitiator(s) (c)."

"8. Method of preparation of a curable composition according to any of the claims 1 to 6 by either blending the epoxy resin (a) and a polyfunctional (meth)acrylate (d) followed by adding the impact modifier (b) or blending the impact modifier (b) first with the polyfunctional (meth)acrylate (d) and then

with the epoxy resin composition (a)."

"9. A process for the preparation of three-dimensional products comprising

a. applying a layer of the **photocurable** composition of at least one of the ~~preceding~~ claims **1 to 6** onto a surface:†

b. exposing the layer imagewise to actinic radiation to form an imaged cured cross-section

c. applying a second layer of the **photocurable** composition of **at least one of the** claims **1 to 6** onto the previously exposed imaged cross-section;

d. exposing the layer from step (c) imagewise to actinic radiation to form an additional imaged cross-section, wherein the radiation causes curing of the second layer in the exposed areas and adhesion to the previously exposed cross-section; and

e. repeating steps (c) and (d) in order to build up a three-dimensional article."

IV. In that decision the opposition division held *inter alia* that said main request fulfilled the requirements of sufficiency of disclosure and of Article 123(2) EPC but that it lacked novelty over D2a and D2b.

Regarding novelty, the opposition division in particular held that both D2a and D2b were valid prior art pursuant to Article 54(2) EPC because the priority claimed for the patent in suit was not valid. In addition, D2a and D2b both disclosed radiation curable resin compositions comprising components (a) and (c) to

(e) as defined in claim 1 of the main request together with an impact modifier to be selected from three classes of components (D1) to (D3). Since the specific impact modifiers according to feature (b) of operative claim 1 were disclosed as an embodiment of component (D3) (for D2a) and or (D1) (for D2b), a composition according to operative claim 1 could be arrived at after performing a single selection within the list of suitable impact modifiers taught in each of D2a and D2b.

- V. The patent proprietor (appellant) lodged an appeal against the above decision and, in its statement of grounds of appeal, requested that the decision of the opposition division be set aside and that the patent be maintained in amended form according to either the main request on which the decision was based or any of auxiliary requests I to VI filed therewith.
- VI. In its reply to the statement of grounds of appeal the opponent (respondent) requested that the appeal be dismissed.
- VII. With letter dated 23 August 2017, the appellant submitted a new auxiliary request IV in replacement of auxiliary request IV submitted with the statement of grounds of appeal.
- VIII. With a communication sent in preparation of oral proceedings, the Board set out its preliminary view of the case. The attention of the parties was drawn to decision G 1/15 (OJ EPO 2017, A82) since it appeared that the issue of partial priority was relevant for the present case.

- IX. With letter dated 13 February 2019 the appellant submitted an additional main request a and additional auxiliary requests IIa and IVa.
- X. During the oral proceedings which were held on 14 March 2019 in the presence of both parties, the respondent requested that main request a and auxiliary requests IIa and IVa be not admitted into the proceedings. Also, the appellant requested that, should the Board arrive at the conclusion that the main request fulfills the requirements of sufficiency of disclosure, Article 123(2) EPC and Article 54 EPC, the case be remitted to the department of first instance to deal with inventive step. To the contrary, the respondent requested that, should the Board come to such conclusions, the case should not be remitted. Also, the respondent requested that, in case of remittal, a decision be taken on admittance of main request a, auxiliary request IIa and auxiliary request IVa.
- XI. The arguments of the appellant, as far as relevant to the present decision, were essentially as follows:

Main request

(a) Article 123(2) EPC

The feature "monofunctional methacrylate compound", which was encompassed in the definition of feature (d) of operative claim 1, was derivable from the second paragraph on page 25 of the application as filed;

In the context of a process for 3D printing, the reference to a "second" layer in step c) of

operative claim 9 implied that said layer was of the same nature as the layer mentioned in step a) of said claim 9. Using different layers would not make sense and was not supported by any passage of the application as filed.

Therefore, operative claims 1 and 9 satisfied the requirements of Article 123(2) EPC

(b) Sufficiency of disclosure

The upper limit for the temperature of heating step (A) and the limit for the temperature of the cooling down in step (C) of operative claim 7 were dictated by practical reasons, in particular the decomposition temperature of the components used, the handleability or the maintenance of a suitable viscosity. The respondent's objections were rather related to a possible issue of clarity but not to sufficiency of disclosure.

(c) Novelty over D2a and D2b

The combination of features specified in operative claim 1 was not directly and unambiguously disclosed in D2a and D2b and could only be arrived at after performing a series of selections within the ambit of D2a. In that respect, the specific impact modifiers (b) according to operative claim 1 were only disclosed as an optional component in the description of D2a and D2b but were neither mentioned in the claims, nor in the examples thereof. Also, a series of combinations of different dependent claims of either D2a or D2b was necessary in order to arrive at a composition comprising components (a) and (c) to (e) according

to operative claim 1, together with an impact modifier which was however not as defined in feature (b) of operative claim 1. Under such circumstances, the subject-matter of operative claim 1 was not anticipated by D2a and D2b.

The subject-matter of operative claim 9, which made reference to operative claim 1, was not anticipated by D2a or D2b for the same reasons as outlined above in respect of operative claim 1.

(d) Remittal

The case should be remitted to the department of first instance to deal with the issue of inventive step in order not to deprive the patent proprietor of the right to have a decision on that issue by two instances. In addition, the issue regarding a possible remittal to the department of first instance was mentioned in the Board's communication and, thus, could not surprise the respondent. Finally, it should be taken into account that no discussion on inventive step took place during the first instance proceedings.

(e) Inventive step starting from D3

The subject-matter of operative claim 1 differed from the closest prior art constituted by the composition of examples 1, 3 or 5 of D3 in that it comprised a specific impact modifier b), which was different from the impact modifiers taught in these examples of D3.

Examples 48 and 49 and comparative examples 47 and 50 of the patent in suit showed that that

distinguishing feature was related to an improvement in terms of stability of the formulations as well as of transparency and accuracy of the 3D printings made therewith. In that respect, it should be taken into account that improving the accuracy of 3D printings was the most important effect to be achieved. Therefore, the technical problem effectively solved resided in the provision of photocurable compositions having high toughness and high accuracy in 3D printings.

D5 dealt with thermoset materials and did not concern 3D printings at all. Therefore, D3 and D5 were related to completely different technical fields and the combination of these documents could only be made with hindsight.

For those reasons, the subject-matter of operative claim 1, and therefore of each of operative claims 2 to 9, was inventive starting from D3 as closest prior art.

(f) Inventive step starting from D2a

Since the main request benefited from the priority claimed in the patent in suit, D2a, which was published between the priority and the filing date of the patent in suit, could not be considered for the assessment of inventive step.

Even if D2a were considered as a valid prior art document for inventive step, the same line of argumentation was valid as when starting from D3 as closest prior art. In that respect, although impact modifiers according to feature (b) of operative claim 1 were disclosed in the description of D2a,

there was no hint in D2a or in any of the documents cited in the proceedings to use those impact modifiers in order to solve the problem identified above in respect of D3.

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

Main request

(a) Article 123(2) EPC

There was no support in the application as filed for the feature "monofunctional methacrylate compound" which was encompassed in the definition of feature (d) of claim 1. In addition, claim 9 was based on original claim 17 but did not mandatorily make reference in step c) to the composition defined in claim 1 of the application as filed. For those reasons, operative claims 1 and 9 did not satisfy the requirements of Article 123(2) EPC.

(b) Sufficiency of disclosure

The requirements of sufficiency of disclosure were not satisfied because of the lack of an upper limit for the temperature of heating step (A) and of the lack of a limit for the temperature of the cooling down in step (C) of operative claim 7.

(c) Novelty over D2a and D2b

The combination of features (a) and (c) to (e) according to operative claim 1, together with an impact modifier which was however not as defined in feature (b) of operative claim 1, could be arrived

at by combining claims 1, 2, 12, 19 and 20 of each of D2a and D2b and was specifically disclosed in many examples of D2a and D2b. In addition, both D2a and D2b taught in their description that the impact modifier could be a specific impact modifier according to feature (b) of operative claim 1. Therefore, a composition according to operative claim 1 could be arrived at either from the claims or from some of the examples of D2a and D2b after performing a single selection within the list of suitable impact modifiers taught in D2a and D2b. Consequently, the subject-matter of operative claim 1 was anticipated by D2a and D2b.

The same was valid for operative claim 9 in view of claim 30 of each of D2a and D2b.

Although D2a and D2b were intermediate documents, which were published between the priority and the filing date of the patent in suit, they were both novelty destroying pursuant to Article 54(2) EPC because the operative claims did not benefit from the priority claimed by the patent in suit. Besides, even if the priority of the patent in suit were to be acknowledged, at least D2a would be novelty destroying pursuant to Article 54(3) EPC.

(d) Remittal

The case should not be remitted to the department of first instance to deal with inventive step because the request of remittal was late-filed and a final decision was necessary to ensure the efficiency of the proceedings. In that respect, the appellant had submitted arguments in support of inventive step in its statement of grounds of

appeal and elaborated on that topic in each of its further submissions. Therefore, the respondent also prepared its case for the oral proceedings and was surprised that a request for remittal was put forward at the oral proceedings. For those reasons, the appellant's request for a remittal should not be granted.

(e) Inventive step starting from D3

The subject-matter of operative claim 1 differed from the composition of examples 1, 3 or 5 of D3 in that it comprised a specific impact modifier (b), which was different from the impact modifiers taught in D3.

It was not contested that examples 48 and 49 and comparative examples 47 and 50 of the patent in suit showed that that distinguishing feature was related to an improvement in terms of stability of the formulations as well as of transparency and accuracy of the 3D printings made. Therefore, the technical problem effectively solved resided in the provision of photocurable compositions which were more stable and led to 3D printings which were more transparent and had improved accuracy.

It was derivable from the disclosure of both D3 and D5 that the material of D3 was a thermoset material under the definition of D5. In any case, both documents belonged to at least neighbouring technical fields. Therefore, the skilled person would have contemplated combining the teachings of both documents. In that respect, D5 in particular taught that the transparency of e.g. epoxy compositions could be improved by using impact

modifiers according to feature (b) of operative claim 1 instead of core shell particles used as impact modifiers in D3, i.e. the skilled person was taught how to solve the problem of transparency addressed in the patent in suit in the same manner as by operative claim 1. The further improvements in terms of stability or accuracy of 3D printings were merely bonus effects.

For those reasons, the subject-matter of at least operative claim 1 was not inventive starting from D3 as closest prior art in combination with D5.

(f) Inventive step starting from D2a

Since the claims of the main request did not benefit from the priority claimed in the patent in suit, D2a could be considered for the assessment of inventive step.

Starting from D2a as closest prior art, the same line of argumentation was valid as when starting from D3, the sole difference being that, as compared to D3, D2a additionally mentioned in its description the impact modifier defined in feature (b) of operative claim 1, albeit without any link to an effect related thereto.

XIII. The appellant requested that the decision of the opposition division be set aside and that the case be remitted to the department of first instance for discussion of inventive step, or alternatively that the patent be maintained in amended form according to one of the following requests, in that order:

- the main request filed with letter of 21 November 2013;
- main request a filed with letter of 13 February 2019;
- auxiliary request I or II filed with the statement of grounds of appeal;
- auxiliary request IIa filed with letter of 13 February 2019;
- auxiliary request III filed with the statement of grounds of appeal;
- auxiliary request IV filed with letter of 23 August 2017;
- auxiliary request IVa filed with letter of 13 February 2019;
- auxiliary request V or VI filed with the statement of grounds of appeal

The respondent requested that the appeal be dismissed. It further requested that main request a, auxiliary request IIa and auxiliary request IVa not be admitted into the proceedings, and the case not be remitted to the department of first instance.

Reasons for the Decision

Main request

1. Article 123(2) EPC
- 1.1 The respondent's objections are directed to operative claims 1 and 9.
- 1.2 Regarding claim 1, the respondent's sole objection is that there was no support in the application as filed (D1a) for the feature "monofunctional methacrylate compound" which was encompassed in the definition of feature (d) of claim 1.

In that respect, information regarding feature (d) may be found on pages 21 to 27 of the application as filed, whereby it is in particular indicated therein that:

- (a) (meth)acrylate refers to an acrylate, a methacrylate, or a mixture thereof (page 21, line 7);
- (b) the acrylate-containing compound may include at least one polyfunctional (meth)acrylate (page 21, second paragraph, first sentence);
- (c) monoacrylates may also be employed alone (page 21, second paragraph; second sentence);
- (d) mono (meth)acrylic compound may be added to compositions to provide flexibility (page 25, second paragraph).

According to said passage (b), the term "acrylate" is used in said paragraph of the application as filed as meaning "(meth)acrylate", i.e. acrylate or methacrylate (see passage (a)). Therefore, said passage (c) of the application as filed is understood as meaning "monofunctional methacrylate compound may also be employed alone", which provides a valid basis for the part of feature (d) of operative claim 1. Such a reading is further confirmed by above passage (d) of the application as filed.

In view of the above, feature (d) of operative claim 1 is directly and unambiguously derivable from page 21, paragraphs 1 and 2 and page 25, second paragraph, of the application as filed.

1.3 Regarding claim 9, the respondent's objection is based on the argument that operative claim 9 was based on original claim 17 but failed to make reference in step c) exclusively to "the composition of claim 1" (i.e. as defined in claim 1 of the application as filed).

In that respect, both original claim 17 and operative claim 9 are directed to a 3D printing process, whereby it would not make sense that layers of different nature are used. Therefore, the skilled person would understand that the same composition should be used in steps a) and c) of the process according to operative claim 9 and of original claim 17, meaning that original claim 17 would be read as applying to any curable composition according to the preceding claims (as in step a)) or more in general according to the application as filed. The fact that compositions according to operative claim 1 were directly and unambiguously derivable from the application as filed

was shown in section 1.2 above. In the absence of any argument in that respect regarding compositions according to operative claims 2 to 6, the same conclusion is also valid for these claims. Finally, the same conclusion applies when reading the application as filed as a whole. For those reasons, the respondent's argument pursuant Article 123(2) EPC in respect of operative claim 9 did not convince.

2. Sufficiency of disclosure

2.1 The respondent's objection is directed to operative claim 7, whereby it is argued that the requirements of sufficiency of disclosure are not satisfied because of:

(a) the lack of an upper limit for the temperature of heating step (A);

(b) the lack of a limit for the temperature of the cooling down in step (C).

2.2 Regarding objection (a), it is evident that the skilled person should stop the heating before the composition deteriorates and avoid temperatures which cause deterioration. In addition, the patent in suit provides in that respect some guidance in the examples (paragraphs 109-110 and 125; page 28, lines 30-35). It is noted that the respondent has not explained why he considered that those conclusions, which were already reached by the opposition division (section 2.2 of the reasons of the decision), were wrong, in particular not in reply to the Board's communication, in which said issue was addressed (section 6.2).

2.3 Regarding objection (b), it is agreed with the appellant that the skilled person would know in

practice when to stop and which temperature could be reasonable. Besides, it was acknowledged by the respondent himself (see reply to the statement of grounds of appeal: page 4, end of section 2.II) that some guidance in that respect is provided in the patent in suit (page 17, line 16 and page 28, line 34). In any case, there is no evidence on file that the skilled person cannot carry out the method of operative claim 7. There is in particular no evidence that the addition of components (d) and (e) would cause any difficulty, as alleged by the respondent (rejoinder to the statement of grounds of appeal: last sentence of section 2.II).

2.4 In view of the above, the respondent's objections related to sufficiency of disclosure are rejected.

3. Novelty

3.1 The respondent, adhering to the opposition division's conclusions (decision: section 3.2), argued that the operative claims did not benefit from the priority claimed by the patent in suit. As a consequence, D2a and D2b (priority document of D2a; made available from the file inspection), which were either published or available before the filing date of the patent in suit, were novelty destroying for operative claims 1 and 9 pursuant to Article 54(2) EPC. In addition, even if the operative claims benefited from the priority of the patent in suit, at least D2a was novelty destroying for the subject-matter of operative claims 1 and 9 under Article 54(3) EPC.

3.2 Independently of the question whether or not the operative claims effectively benefit at least in part from the priority claimed by the patent in suit, a

condition to be clarified to arrive at a conclusion on novelty is whether or not either D2a or D2b effectively discloses directly and unambiguously subject-matter as defined in operative claims 1 and 9.

3.3 Novelty of operative claims 1 and 9 over D2a

3.3.1 According to the case law (Case Law of the Boards of Appeal of the EPO, 8th edition, 2016, I.C.4.2), when contesting the novelty of a claim, the content of a document must not be treated as something in the nature of a reservoir from which features pertaining to separate embodiments may permissibly be drawn in order to create artificially a particular embodiment which would destroy novelty, unless the document itself suggests such a combination of features. This means that, in the present case, the question has to be answered whether the specific combination of features now being defined in operative claim 1 may be held to be directly and unambiguously derivable from D2a.

3.3.2 In that respect, claim 1 of D2a is directed to radiation curable resin compositions having specific properties and comprising:

(a) a cationically polymerisable component;

(b) a cationic photoinitiator;

(c) a hydroxyl component;

(d) an impact modifier.

The **cationically polymerisable component (a)** may be a liquid epoxy resin (claim 2; page 4, component (A1); page 4, lines 26-30) according to feature (a) of

operative claim 1 but is not limited thereto (claim 1; components (A2) and (A3) on pages 6-10). However, it is further derivable from D2a that epoxy resins are preferably used as component (a) (page 4, line 8; claim 2; examples, which appear to have been all carried out using epoxy resins).

Component (b) of D2a corresponds to feature (c) of operative claim 1.

Although the wording used to define **component (c)** of claim 1 of D2a is not limited to polyols according to component (e) of operative claim 1, all components (c) disclosed in D2a are polyols (claims 3-6 and 22; pages 12-14: component (C)). Therefore, component (c) of D2a effectively corresponds to component (e) of operative claim 1.

Various embodiments are disclosed in D2a concerning the **impact modifier (d)** (claims 10-18; components (D1), (D2) and (D3) on pages 14-18), whereby it was undisputed that components E20, E40 and M22 specified at page 18, lines 8-9 of D2a as suitable component (D3) correspond to feature (b) according to operative claim 1 (see paragraph 51 of the patent in suit). In that respect, the appellant argued that components (D3) were only disclosed as being optional in D2a (see page 14, lines 14-15; page 15, lines 20-22; see also the wording "may also contain" at page 17, line 20 of D2a; note also that only embodiments (D1) and (D2) are reflected in the claims, 10-11 and 12-18, of D2a). However, considering that it is derivable from page 17, lines 28-29 of D2a that components (D3) are indeed impact modifiers and further taking into account that the same denomination and presentation of those components is used for each of components "(D1)",

“(D2)” and “(D3)” in the description of D2a, that argument is rejected by the Board. The parties were also in dispute if the selection of one of the impact modifier E20, E40 and M22 taught in D2a constitutes a single selection or a series of selections. In that respect, in the Board’s view, in order to arrive at those specific impact modifiers (E20, E40 and M22), a single selection is necessary, namely to choose those components among all the possible impact modifiers taught in D2a as suitable components (D1), (D2) or (D3).

The radiation curable resin compositions of D2a may further comprise, as optional component, a radically polymerisable compound (claims 19-20; component (E) on pages 18-20), whereby all the components (e) disclosed in D2a are (meth)acrylate compounds according to feature (d) of operative claim 1.

In addition, examples 4-16 and 18 of D2a (tables 5a to 5c) are all directed to photocurable compositions comprising components (a) and (c) to (e) according to operative claim 1 but using as impact modifier a component which is not according to feature (b) of operative claim 1 (use is made of a component (D1) and/or (D2) as defined in D2a). Looking at the overall disclosure of D2a, it is however noted that

- the most general compositions of D2a (as defined e.g. in claim 1 thereof) do not mandatorily comprise components (b) and (d) according to operative claim 1;
- the examples of table 4 of D2a (page 39) do not contain components (b) and (d) according to operative claim 1;

- example 17 of D2a does not comprise component (e) according to operative claim 1.

Therefore, not all the examples of D2a are directed to compositions comprising components (a) and (c) to (e) according to operative claim 1 and choosing a composition according to examples 4-16 and 18 of D2a effectively amounts to selecting a specific embodiment of D2a.

Under these circumstances, the specific combination of features (a) to (e) as defined in operative claim 1 can only be arrived at by combining the specific impact modifiers E20, E40 and M22 disclosed at a single location of D2a (page 18, lines 7-9) with a further specific disclosure of D2a consisting of i) either claim 20 of D2a, read taking into account the general teaching of D2a concerning the epoxy resin (liquid at 23°C) and the hydroxy component/polyol or ii) any of the examples 4-16 and 18. However, in the absence of any pointer to that precise combination of passages of D2a, the subject-matter of operative claim 1 can only be arrived at after performing a double selection within the ambit of D2a, i.e. it is not directly and unambiguously derivable from D2a.

- 3.3.3 In view of the above, the novelty objection raised in respect of operative claim 1 over D2a is rejected.
- 3.3.4 Since operative claim 9 is directed to a process in which use is made of a composition according to operative claim 1, also the combination of features according to operative claim 9 is not directly and unambiguously derivable from D2a.

3.4 Novelty of operative claims 1 and 9 over D2b

3.4.1 D2b is the priority document of D2a, whereby it was not in dispute between the parties that D2b was made available to the public via file inspection between the priority date and the filing date of the application on which the patent in suit is based.

3.5 In that respect, the disclosure of D2b is very similar to the one of D2a and the respondent's novelty objection in respect of D2b was also very similar to the objection related to D2a. In particular, claims 1, 2, 10-12 and 19-20 of D2b are identical to claims 1, 2, 10-12 and 19-20 of D2a and the teachings of D2a and D2b regarding the cationically polymerisable component a) and the hydroxy component b) are very similar, if not identical. The main difference between the disclosures of D2a and D2b relied upon by the appellant was that the specific impact modifiers E20, E40 and M22 (corresponding to feature (b) of operative claim 1) were not disclosed in D2b as possible embodiments of the impact modifier corresponding to component (D3) of D2a but as an embodiment of the impact modifier (D1) (see page 14, lines 17-20 of D2b). It may further be noted that D2b comprises the same table 4 (page 37) as D2a and a table 5 (page 38) which corresponds to table 5a of D2a, i.e. containing the same examples 4-10. Under such circumstances, the Board is bound to arrive at the same conclusion in respect of novelty over D2b as over D2a, namely that the specific combination of features (a) to (e) according to operative claim 1 is not directly and unambiguously derivable from D2b because it can only be arrived at after combining a specific, isolated passage of the description concerning impact modifiers E20, E40 and M22 with another, unrelated passage of D2b (either

resulting from the combination of claims or the selection of a specific example of table 5).

In view of the above, also the novelty objection raised in respect of operative claims 1 and 9 over D2b is rejected.

3.6 Since, as explained above, the subject-matter of operative claims 1 and 9 is not directly and unambiguously derivable from D2a and D2b, the novelty objections put forward by the respondent cannot succeed and there is no need for the Board to assess whether or not the operative claims may benefit from the priority claimed in the patent in suit, which was in dispute between the parties.

4. Remittal

4.1 Regarding the request for remittal to the department of first instance to deal with inventive step (Article 111(1) EPC), based on the argument that the patent proprietor had the right to have a decision on inventive step by two instances, it is established case law that there is no absolute right for a party to have an issue decided upon by two instances (see Case Law of the Boards of Appeal of the European Patent Office, 8th edition, 2016, section IV.E.7.6.1).

4.2 In addition, it is noted that the appellant put forward arguments in respect of inventive step in respect of the main request both in the statement of grounds of appeal (section 5) and in its last submission dated 13 February 2019, whereby, in the latter, the respondent's objection based on the combination of either D2a or D3 as closest prior art with D5 was taken into account (section 1.5). In that respect, it is

conspicuous that no request for a remittal to deal with inventive step was held to be necessary at that stage.

4.3 Confronted with the request for a remittal to the department of first instance made for the first time at the oral proceedings, the Board decided to hear first the arguments of both parties in that respect. Considering that the arguments presented were limited to the ones which had already been put forward in writing by both parties, the Board decided that there was no valid reason to remit the case to the opposition division.

4.4 For those reasons, the appellant's request to remit the case to the department of first instance to deal with inventive step was rejected.

5. Inventive step starting from D3

5.1 Closest prior art and distinguishing feature

Both parties were of the opinion that examples 1, 3 and 5 of D3 constituted a suitable closest prior art for the subject-matter of claim 1 of the main request and that the distinguishing feature with respect to any of them was the specific impact modifier (core-shell elastomer particles in the examples of D3 and a block copolymer having at least one block composed of methyl methacrylate in operative claim 1). There is no reason for the Board to deviate from that view, in particular considering that both the patent in suit and D3, in particular its examples 1, 3 and 5, deal with the preparation of photocurable resin compositions for use in 3D photofabrication (patent in suit: paragraphs 1, 10 to 12, 112-113 and 142-152; D3: claims 1, 14 and 15; page 1, lines 5-29; page 3, line 30 to page 4, line 19;

page 25, line 21 to page 27, line 6; table 1).

5.2 Problem effectively solved

5.2.1 It was also not in dispute between the parties that examples 48 and 49 and comparative examples 47 and 50, respectively, of the patent in suit showed that the distinguishing feature of operative claim 1 over the closest prior art, namely the nature of the impact modifier (b), was related to an improvement in terms of stability of the formulations as well as of transparency and accuracy of the 3D printings made, as indicated in the patent in suit. The Board has also no reason to deviate from that view (see table bridging pages 28 and 29 and paragraphs 147 to 152 of the patent in suit).

5.2.2 In that respect, although it is agreed with the appellant that an improvement in terms of accuracy may be the most desired effect that the skilled person working in the field of 3D printing is seeking to achieve, it was not shown that there was any reason to deviate from the formulation of the technical problem effectively solved proposed by the respondent, which takes also into account the improvement in terms of formulation stability and transparency of the obtained 3D printing.

5.2.3 Therefore, the technical problem effectively solved resides in the provision of photocurable compositions which are more stable and which lead to 3D printings which are more transparent and have improved accuracy.

5.3 Obviousness

5.3.1 The question remains to be answered if the skilled person, desiring to solve the problem(s) identified as indicated above, would, in view of the closest prior art, possibly in combination with other prior art or with common general knowledge, have modified the disclosure of examples 1, 3 and 5 of D3 in such a way as to arrive at the claimed subject matter.

5.3.2 In that respect, the sole objection put forward by the respondent was based on the combination of examples 1, 3 and 5 of D3 with the teaching of D5.

However, D5 is directed to thermoset compositions having improved impact resistance, which are obtained by curing and moulding at elevated temperature a blend of a thermoset resin such as an epoxy resin, an impact modifier corresponding to feature (b) of operative claim 1 and a curing agent for the thermoset resin (D5: claims 1 and 23; page 6, lines 19-20; page 6, line 29 to page 7, line 3; page 7, line 23 to page 8, line 2; page 13, line 21 to page 14, line 3; page 18, lines 5-30).

In the present case, it was not rendered credible by the respondent that the skilled person aiming at providing photocurable resin compositions for use in 3D photofabrication, let alone compositions having improved properties as indicated in section 5.2.3 above, would consider a document such as D5, which is directed to compositions for a completely different use (thermoset resins for mouldings) and which therefore require to exhibit a different set of properties. In that respect, D5 in particular nowhere discloses photocurable compositions for 3D printing, whereby it

is in particular taken into account that 3D printing processes according to either the patent in suit or D3 are based on an iterative deposition and photocuring of thin layers, which require the obtention of very well defined printed layers, which was not shown to be of any importance, in particular at such a degree of accuracy, for the process of preparation of the thermoset mouldings of D5.

The fact that D5 defines a thermoset material in a very general manner as being formed of polymer chains of variable length bonded to one another via covalent bonds, so as to form a three dimensional network (D5: page 1, lines 7-9), which also encompasses the material of D3, does not affect the above conclusion, which is not based on the different nature of the polymeric materials used in D3 and D5 but rather on the different uses of these compositions (3D printing on one hand; thermoset moulding on the other hand). Therefore, the respondent's argument is rejected.

Also, the fact that D5 teaches that impact modifiers b) lead to improved transparency as compared to core-shell elastomer particles (D5: page 3, line 4 to page 4, line 5; page 5, lines 14-25; page 21, line 30 to page 22, line 4 and tables 1-2), as argued by the respondent, would not be taken into account by the skilled person aiming at solving the technical problem identified above in view of the difference in the nature of the compositions and in the uses thereof in D5 and D3, as indicated above.

In view of the above, it is concluded that the combination of examples 1, 3 or 5 of D3 with the teaching of D5, as argued by the respondent, would only be arrived at with knowledge of the claimed invention

(hindsight), which is not allowable. For that reason, the respondent's objection of lack of inventive step based on the combination of D3 with D5 is rejected.

5.4 For these reasons, the subject-matter of operative claim 1 is inventive starting from examples 1, 3 or 5 of D3 as closest prior art.

5.5 Since claims 2-9 of the main request are either dependent on claim 1 or make reference to it, their subject-matter is also inventive for the same reasons as developed for claim 1 of the main request.

6. Inventive step starting from D2a

6.1 It was clarified with the parties during the oral proceedings before the Board that their lines of argumentation regarding inventive step starting from D2a as closest prior art (i.e. D2a in combination with D5) was the same as the one starting from D3, whereby the sole difference was identified by the respondent as residing in the fact that, as compared to D3, D2a additionally mentioned in its description the impact modifier defined in feature (b) of operative claim 1, albeit without any link to an effect related thereto.

In that respect, D2a is, as D3, also directed to photocurable compositions for 3D printing (claims 1, 30, 31; page 1, lines 7-26; page 3, lines 1-13; page 26, line 26 to page 27, line 32). In addition, the distinguishing feature of the subject-matter of operative claim 1 over the compositions prepared in any of examples 4-16 and 18 of D2a resides, as for D3, in the nature of the impact modifier b).

Therefore, the formulation of the problem effectively

solved over D2a remains the same as the one identified above for D3 (see section 5.2.3).

Regarding obviousness, the sole difference as compared to D3 is that D2a discloses the possible use of impact modifiers according to feature b) of operative claim 1 in its description, among a long list of several alternatives (specific modifiers b) are only disclosed at page 18, lines 7-9 of D2a; alternatives to the impact modifiers used in examples 4-16 and 18 of D2a may either be selected among the suitable embodiments of impact modifiers (D3) indicated in the paragraph bridging pages 17 and 18 of D2a or in the embodiments of impact modifiers (D1) and (D2) disclosed on pages 14-16 of D2a). However, there is no indication in D2a of any effect related to the use of the impact modifiers according to feature b). Therefore, the skilled person would have had no motivation to use such impact modifiers in order to solve the problem of providing photocurable compositions which are more stable and which lead to 3D printings which are more transparent and have improved accuracy identified in section 5.2.3 above.

In addition, regarding the combination of the teaching of D2a with the one of D5, which was relied upon by the respondent, the Board is, in the circumstances of the present case, bound to arrive at the same conclusion as when starting from D3, i.e. the combination of D2a with D5 would only be considered by the skilled person based on hindsight, for the same reasons as outlined above for the combination of D3 with D5.

For that reason, the respondent's objection of lack of inventive step based on the combination of D2a with D5

is rejected.

- 6.2 Considering that the objection of inventive step starting from D2a as closest prior art cannot succeed, there is no need for the Board to assess whether D2a is a prior art pursuant to Article 54(2) EPC, which was in dispute between the parties.
7. Since none of the objections put forward by the respondent in respect of the main request is successful, the decision under appeal is to be set aside and the patent is to be maintained in amended form on the basis of the claims of the main request filed with letter of 21 November 2013.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent in amended form on the basis of the claims of the main request filed with letter of 21 November 2013 and after any necessary consequential amendment of the description.

The Registrar:

The Chairman:



M. Kiehl

D. Semino

Decision electronically authenticated