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**Datasheet for the decision  
of 17 May 2022**

**Case Number:** T 1614/19 - 3.3.07

**Application Number:** 11741053.0

**Publication Number:** 2598101

**IPC:** A61K6/00, A61K6/083

**Language of the proceedings:** EN

**Title of invention:**

KIT OF PARTS, METHOD OF PRODUCING AND USE THEREOF

**Patent Proprietor:**

3M Innovative Properties Company

**Opponent:**

Ivoclara Vivadent AG

**Headword:**

Kit of parts / 3M

**Relevant legal provisions:**

EPC Art. 100(a), 56, 54(2), 123(2), 83, 84  
RPBA Art. 12(4)

**Keyword:**

Late-filed document - admitted (yes)  
Late-filed request - admitted (yes)  
Novelty - main request (yes)  
Inventive step - main request, auxiliary requests 1-6 (no),  
auxiliary request 7 (yes)  
Amendments - added subject-matter (no)  
Late-filed objection - admitted (no)  
Sufficiency of disclosure - (yes)  
Claims - clarity (yes)

**Decisions cited:**

G 0003/14



**Beschwerdekammern**

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Case Number: T 1614/19 - 3.3.07

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.07**  
**of 17 May 2022**

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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
29 March 2019 concerning maintenance of the  
European Patent No. 2598101 in amended form.**

**Composition of the Board:**

**Chairman** A. Uselli  
**Members:** E. Duval  
L. Basterreix

## Summary of Facts and Submissions

I. European patent 2 598 101 (hereinafter "the patent") was granted on the basis of 10 claims. Claim 1 of the patent related to:

"A method for producing a kit of parts comprising part A and part B,

part A comprising

- polymerizable component(s) with an acid group,
- an initiator or an initiator system,

part B comprising

- activator(s), and
- a film former(s) with a molecular weight from 1,000 to 1,200,000,

the film former being selected from natural film formers, semi-synthetic film formers, cellulose derivatives, poly(meth)acrylates, vinyl polymers, polyurethanes, mixtures and combinations thereof, the method comprising the step of

- bringing the components contained in part B of the kit of parts in contact with the surface of an applicator or packaging device,
- drying the surface to form a film."

II. An opposition was filed against the patent on the grounds that its subject-matter lacked novelty and inventive step, it was not sufficiently disclosed and it extended beyond the content of the application as filed.

III. The appeals were filed by the patent proprietor (appellant P) and the opponent (appellant O) against the interlocutory decision of the opposition division

finding that, on the basis of auxiliary request 2, the patent met the requirements of the EPC.

The decision was based on the patent as granted as the main request, and on auxiliary requests 1 and 2 filed (as auxiliary requests 5 and 6) on 13 December 2018.

IV. The decision cited the following documents:

D1: EP 0 006 757 A2

D2: GB 1 415 385 A

D3: US 6 288 138 B1

D4: US 5 525 647 A

D5: "Tragacanth gum" (URL:[https://www.chemicalbook.com/ProductChemicalPropertiesCB7675665\\_EN.htm](https://www.chemicalbook.com/ProductChemicalPropertiesCB7675665_EN.htm))

D6: "Sodium Alginate" (URL:<https://www.worldofchemicals.com/chemicals/chemicalproperties/sodium-alginate.html>)

D7: "Sodium Carboxymethyl Cellulose" (URL:<https://sigmaaldrich.com/catalog/substance/sodiumcarboxymethylcellulose12345900432411?lang=de&region=DE&attrlist=Molecular%20weight>)

D8: "Lack" (URL:<https://de.wikipedia.org/wiki/Lack>)

V. The opposition division decided that:

(a) The main request did not infringe Article 123(2) EPC.

The patent provided ample guidance with respect to the film formers, such that the skilled person was in a position to rework the invention. The requirements of sufficiency of disclosure were thus met.

D1 did not directly and unambiguously disclose the presence of a film former as defined in claim 1 in part B of the kit. Hence, the subject-matter of the main request was novel.

However, the subject-matter of the main request did not meet the requirements of inventive step.

In particular, starting from D1 as the closest prior art, the claimed subject-matter differed by the film former molecular weight of 1000-1200000. The objective technical problem was to provide further kits of parts allowing for application of an adhesive composition to dental or orthodontic surfaces. D1 considered the use as binder of macromolecular acrylates having a molecular weight within the claimed range.

Alternatively, the claimed subject-matter did not involve an inventive step over a combination of D3 with D2.

- (b) The subject-matter of auxiliary request 1 did not involve an inventive step over D3 either.
- (c) Auxiliary request 2 met the requirements of Rule 80, Article 123(2) and (3), and Article 84 EPC. Its subject-matter was sufficiently disclosed and novel over D1.

Claim 1 of auxiliary request 2 was limited to film formers having a molecular weight of 20000-200000. Neither D1 nor D3 disclosed such film formers. The objective technical problem was to provide further kits of parts allowing for application of an adhesive composition to (dental or orthodontic)

surfaces. Since this claimed range was narrow and excluded common film formers used in the field, the subject-matter of claim 1 of auxiliary request 2 amounted to a non-obvious alternative.

VI. In its statement setting out the grounds of appeal, appellant P defended its case on the basis of the patent as granted as the main request, and filed auxiliary requests 1-8.

Auxiliary requests 1-4 differed from the main request in that, in claim 1, the range for the molecular weight of the film former was amended respectively to 10000-1200000, 10000-400000, 20000-400000 and 20000-200000.

In claim 1 of auxiliary requests 5 and 6, the range for the molecular weight of the film former was 20000-200000. In addition, claim 1 of auxiliary request 5 contained the feature that the activator was dissolved or dispersed in the film former. In claim 1 of auxiliary request 6, the surface was limited to that of an applicator.

Claim 1 of auxiliary request 7 read as follows:

"A method for producing a kit of parts comprising part A and part B,

part A comprising

- polymerizable component(s) with an acid group,
- an initiator or an initiator system,

part B comprising

- activator(s), and
- a film former(s) with a molecular weight from 20,000 to 200,000,

the film former being selected from natural film formers, semi-synthetic film formers, cellulose derivatives, poly(meth)acrylates, vinyl polymers, polyurethanes, mixtures and combinations thereof, the method comprising the step of

- bringing the components contained in part B of the kit of parts in contact with the surface of an applicator,

- drying the surface to form a film,

wherein the activator comprises at least one of the following moieties: barbituric acid, barbituric acid salt, thiobarbituric acid, thiobarbituric acid salt, sulfinic acid, sulfinic acid salt or sulfinic acid ester."

VII. With its statement setting out the grounds of appeal, appellant O filed the following documents:

D9: H.G. Elias, Makromoleküle, Band 3: Industrielle Polymere und Synthesen, 6. Auflage, Wiley-VCH Verlag GmbH, Weinheim, 2001 S. 340-341, Tragant

D10: Hunnius Pharmazeutisches Wörterbuch, 7. Auflage, Verlag Walter de Gruyter, Berlin, New York 1993, S. 40, Alginsäure

D11: Hunnius Pharmazeutisches Wörterbuch, 7. Auflage, Verlag Walter de Gruyter, Berlin, New York 1993, S. 513-514, Eudragit

D12: CMC Book, CP Kelco U.S., Inc., 2009

VIII. The Board set out its preliminary opinion in a communication under Article 15(1) RPBA issued on 9 February 2022.

IX. By letter dated 1 April 2022, appellant P submitted auxiliary request 9.



X. Oral proceedings were held before the Board on 17 May 2022.

XI. Appellant P requests that the decision under appeal be set aside and that the patent be maintained as granted, or, alternatively, that the patent be maintained on the basis of one of the auxiliary requests 1-8 filed with the grounds of appeal, or auxiliary request 9 filed on 1 April 2022.

Appellant P further requests that neither D9-D12 nor the new arguments submitted by the appellant O on pages 8-9, section 5.1 of its grounds of appeal, be admitted into the proceedings.

XII. Appellant O requests that the decision under appeal be set aside and that the patent be revoked in its entirety.

Appellant O further requests that auxiliary requests 1-4 and 6-8 not be admitted into the proceedings.

XIII. Appellant O's arguments may be summarised as follows:

(a) Admittance of D9-D12

The filing of D9-D12 was in reaction to the opposition division's finding that the evidence filed in the first instance proceedings relating to the molecular weights of the film formers of D2 (namely D5-D7) was insufficient.

(b) Main request, novelty over D1

D1 disclosed an example where the dental kit comprised a part 1 including methacrylic acid, the initiator N,N-

dimethyl-p-toluidine, monomer A and monomer B; and a part 2 where monomer A was used to bind the activator benzoyl peroxide to the spatula. D1 further indicated that the catalyst component was applied to the mixing tool using the same monomer or prepolymer as used in part 1. Accordingly, D1 disclosed the use in part 2, in place of monomer A, of the prepolymer monomer B, which was a vinyl polymer film former as defined in claim 1 of the main request. Thus the criteria of novelty were not met.

(c) Main request and auxiliary requests 1-6, inventive step

D1 represented a suitable starting point for the assessment of inventive step, because it was concerned with a similar problem, namely two-part kits with adequate fixation of the catalyst to the mixing tool. The process of claim 1 of the main request and of auxiliary requests 1-4 differed only by the molecular weight of the film former(s). No technical effect was shown to arise from this difference. In particular, the comparative composition shown in the patent did not contain any film former, monomer or oligomer, with adhesive properties. The use of film formers with higher molecular weights could either delay or accelerate the release of the catalyst, depending on the nature of the film former and of the catalyst.

The technical problem was the provision of a further kit of parts suitable for the application of a polymerisable composition to (dental or orthodontic) surfaces. The claimed solution, i.e. the arbitrary selection of the recited molecular weight ranges, was obvious because D1 did not limit the molecular weight of the oligomer to be used as adhesive. Furthermore,

the skilled person would have considered using the film formers employed in the similar two-part dental kits of D2 for fixation of catalysts to a surface. D9-D12 showed that the claimed molecular weight ranges were usual for these film formers. Since the problem was the provision of an alternative, the skilled person would have considered all alternatives shown in D2 as a solution.

Alternatively, D3 could be considered as a suitable starting point. D3 disclosed a process for the preparation of kits for dental adhesives, comprising in particular a activator (E) which could be impregnated into, adhered to or adsorbed to an applicator, such as a mixing pad or a spatula. The claimed process only differed by the choice of a film former with the specified molecular weight. The choice of such a film former was however obvious in light of D2.

The additional feature of claim 1 of auxiliary request 5, mandating that the activator was dissolved or dispersed in the film former, did not represent an additional differentiating feature over D1. As to auxiliary request 6, the spatula of D1 and mixing pad of D2 were made of similar materials, such that the limitation of the surface to that of an applicator was still obvious in light of a combination of D1 and D2.

Consequently, neither the main request nor auxiliary requests 1-6 meet the requirements of inventive step.

(d) Auxiliary request 7

- Admittance:

Appellant P had not justified why auxiliary request 7 had been filed for the first time in appeal

proceedings. In addition, the auxiliary requests should follow a convergent sequence. Thus, auxiliary request 7 was not to be admitted into the proceedings.

- Article 123(2) EPC:

Claim 5 (i.e. claim 6 as granted) defined amounts in wt.-% for several components including the polymerizable component(s), initiator(s) or activator(s). Claim 5 was dependent on claim 1, such that the wt.-% had to be relative to the whole composition including the applicator or packaging. The upper limits of the amounts of claim 5 added up to 68 wt.-%, leaving at most 32 wt.-% for the applicator or packaging, which was not disclosed in the application as filed.

Furthermore, the combination, in claim 1 of auxiliary request 7, of the molecular weight range of 20000-200000 with the limitation to an applicator as surface, amounted to selections from several independent lists, which infringed Article 123(2) EPC.

- Clarity:

The molecular weight in claim 1 of auxiliary request 7 had been limited to narrower ranges on the basis of the description, and was thus to be examined for compliance with Article 84 EPC. Since claim 1 specified neither the type of average molecular weights meant, nor the method for its determination, claim 1 lacked clarity.

In addition, claim 1 of auxiliary request 7 had been amended in that the activator was limited to a list including sulfinic acid salt, and was thus now in contradiction with dependent claim 4, which allowed for the initiator to be identical. The criteria of Article 84 were accordingly not met.

- Sufficiency of disclosure:

- Molecular weights:

The determination of the molecular weights specified in claim 1 represented an undue burden for the skilled person, such that the requirements of sufficiency of disclosure were not met.

- Film formers:

Some of the film formers recited in claim 1, such as polyurethanes (see the wikipedia article D8, page 9), resulted in an undissolvable film from which the activator could not be released or resolved upon combination with part A. As a result, no hardenable composition would be produced, and the feature "adhesive" of claims 7 and 8 could not be achieved.

- Inventive step

The skilled person starting from D1 would consider exchanging the amine and peroxide in D1, replace the amine with the sulfinic or barbituric acid activator in light of D3, and use the film former suggested in D2. The film former and the activator addressed separate problems, namely adhesion to the surface and catalysing the polymerisation. Accordingly, the subject-matter of claim 1 of auxiliary request 7 lacked an inventive step over a combination of D1, D2 and D3.

XIV. Appellant P's arguments may be summarised as follows:

(a) Admittance of D9-D12

Documents D9-D12 were late filed and not to be admitted. It was not apparent why these documents could not have been filed already in the first instance

proceedings, considering that the preliminary opinion of the opposition division was that the opposition would be rejected.

(b) Main request, novelty over D1

The N,N-dimethyl-p-toluidine of part 1 of the two-part dental filing composition of D1 did not qualify as initiator, and the benzoyl peroxide of part 2 of D1 did not qualify as an activator. Furthermore, neither monomer A nor monomer B were film formers as defined in claim 1 of the main request. Lastly, the use of monomer B as film former in part 2 was not directly and unambiguously shown in D1. The criteria of novelty were met.

(c) Main request and auxiliary requests 1-6, inventive step

In D1, part 1 of the two-part dental filling composition comprised N,N-dimethyl-p-toluidine. Part 2, containing monomer A (a prepolymeric binder) and benzoyl peroxide (catalyst), was used for charging a dry spatula. However, the benzoyl peroxide would be understood as initiator, and N,N-dimethyl-p-toluidine as activator. Consequently, D1 did not qualify as closest prior art.

The subject-matter of claim 1 of the main request differed from D1 in that:

- an activator was fixed to the surface of an applicator or packaging device, and
- a film former with defined molecular weight and selected from the list of claim 1 was used.

As a result, the activator was sufficiently fixed to the surface of the applicator and was able to resolve

slowly but in a sufficient amount so that several applications of the adhesive composition could be accomplished. The technical problem was to provide a kit of parts allowing for the consecutive application of an adhesive composition without significant drop in performance. The claimed solution was not obvious in light of D1, which focused on a single use applicator. Furthermore, D1 limited the binder to co-reactive materials or non-reactive compatible materials. Thus, in view of the drawbacks mentioned in D1 for encapsulating material, the skilled person would not have used the film formers mentioned in D2. If at all, only the epoxy resin binders mentioned as preferred in D2 would have been considered.

The alternative starting point D3 preferably disclosed a two-part dental kit in which the activator was impregnated into a sponge applicator. D3 did not disclose the use a film former for fixing an activator to an applicator or packaging device, and did not disclose a film former as defined in claim 1 of the main request. The technical effect and the problem were as described for D1 as starting point. The claimed solution was suggested neither by D3 nor by D2. Since D3 did not prefer the use of a monomer for fixing component (E) to the applicator, a combination with D2 was questionable. Accordingly, the main request met the requirements of inventive step.

Regarding auxiliary requests 1-4, the selection of higher molecular weights had an impact on the film former's release properties, and was further away from D1 which considered low molecular weights. As to auxiliary request 6, its subject-matter did not result from an obvious combination of D1 with D2 since D1 used a tool and D2 a sheet.

(d) Auxiliary request 7

- Article 123(2) EPC

Neither the applicator, nor the packaging device, nor the surface of either of those devices was a component of the composition. As explained by the opposition division, claim 6 of the patent (corresponding to claim 5 of auxiliary request 7) met the requirements of Article 123(2) EPC.

Claim 1 of auxiliary request 7 did not result from multiple selections from independent lists. The example of the application as filed supported the use of an applicator and molecular weights in the claimed range.

- Clarity:

The range 20000-200000 was as clear as the range 1000-1200000 given in granted claim 1. Likewise, the possibility for the activator to be a sulfinic acid salt while the initiator allowed for reducing agents was already present in claim 5 as granted by virtue of its dependency on claim 4 as granted. Thus the amendments did not introduce any features which were non-compliant with Article 84 EPC.

- Sufficiency of disclosure

- Molecular weights:

The completely new line of arguments relating to sufficiency of disclosure, submitted by appellant O on pages 8-9, section 5.1 of its grounds of appeal, was not to be admitted to the appeal proceedings. The question how the molecular weight of chemical



substances could be determined had not been discussed or objected during the first instance proceedings.

- Film formers:

The skilled person with the intention to understand and rework the invention would not willfully select film formers which are said in D8 to be harmful and do not work. The requirements of Article 83 EPC were met.

- Inventive step:

The activators recited in claim 1 of auxiliary request 7 were not hinted at in D1 or D2. Appellant O's objection furthermore supposed that the skilled person carry out a large number of steps involving D1, D2 and D3. None of these documents suggested a kit of parts comprising a part where an activator as recited in claim 1 was fixed to the surface of an applicator with the aid of a film former as defined in claim 1.

## **Reasons for the Decision**

### 1. Admittance of D9-D12

Appellant O filed D9-D12 together with its grounds of appeal on 29 July 2019. The admittance of D9-D12 is subject to the provisions of Article 12(4) RPBA 2007. Article 12(4) RPBA 2007 gives the Board discretion not to admit, on appeal, documents that could have been presented in the opposition proceedings.

According to established case law, documents filed with the statement of grounds of appeal should not be held inadmissible if they are an appropriate and immediate reaction to developments in the previous proceedings, for example where they give the losing party in the

opposition proceedings an opportunity to fill in the gaps in its arguments by presenting further evidence on appeal (see the Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, V.A.4.13.1).

Here, appellant O filed D9-D12 in appeal with the aim to show that film formers as mentioned in D2 with a molecular weight in the claimed ranges were known in the field. During the proceedings before the opposition division, this question had been under debate, and appellant O had filed D5-D7 to support its position. However, the opposition division had nonetheless found that the molecular weight range defined in auxiliary request 2 underlying the appealed decision was narrow and excluded common film formers used in the field. The Board considers the filing of D9-D12 as a legitimate reaction to the opposition division's finding.

Accordingly, the Board admits D9-D12.

2. Main request (patent as granted)

For the following reasons, the Board finds that the subject-matter of claim 1 of the main request is novel over D1, but does not involve an inventive step starting from D1.

2.1 Novelty over D1

2.1.1 D1 discloses a two-part composition for the application of e.g. a dental filling composition. In the sole example of D1, the two-part dental filling composition comprises parts 1 and 2 (see page 5). Part 2 is applied to the surface of a spatula (i.e. an applicator) as a solution followed by drying (see page 6).

Part 1 comprises, among others:

- methacrylic acid, and
- N,N-dimethyl-p-toluidine.

Part 2 comprises:

- monomer A (shown on page 6), and
- benzoyl peroxide.

2.1.2 Methacrylic acid qualifies as a polymerizable component with an acid group (see paragraph [0076] of the patent).

2.1.3 N,N-dimethyl-p-toluidine is listed among the reducing agents considered as initiator or initiator system in the patent (see paragraphs [0099] and [0096]).

2.1.4 The benzoyl peroxide of part 2 of D1 can be regarded as the activator of claim 1 of the main request. According to the patent (see paragraphs [0103]-[0104]), an activator is able to facilitate the hardening reaction of the polymerizable components, and it comprises a moiety suitable of being activated for instance *via* a redox-reaction. Benzoyl peroxide is an oxidizing agent (see paragraph [0102]) and thus matches this definition.

In this respect, the difference made in the patent between the initiator being able to initiate the hardening reaction (see paragraph [0092]) and the activator being able to facilitate the hardening reaction (see paragraph [0103]) does not lead to a different conclusion, because the hardening reaction only takes place, in the patent and in D1, in the presence of both components. Consequently, using the different expressions "initiator" and "activator" does

not, in this context, differentiate these two catalytic components from one another.

Appellant P further relied on D2 (see page 1, lines 85-90) and D4 (see column 1, lines 24-32), where the terms "accelerator"/"catalyst" and "co-initiator"/"initiator" are respectively used for the amine/peroxide components. The Board does not find this argument convincing, because the patent specifications D2 and D4 are not relevant for the interpretation of claim 1 of the main request.

2.1.5 However, the monomer A present in part 2 of the example of D1 (component 10; see the structure on page 6), having a molecular weight of 858 g/mol, does not qualify as a film former with a molecular weight of 1000-1200000 selected from natural film formers, semi-synthetic film formers, cellulose derivatives, poly(meth)acrylates, vinyl polymers, polyurethanes, mixtures and combinations thereof.

In the Board's opinion, the remaining parts of D1 do not show either the presence of such a film former in combination with the other features of claim 1 of the main request.

According to appellant O, D1 indicates that, preferably, the catalyst component [of part 2] is applied to the mixing tool with the aid of an adhesive which comprises a small amount of the same monomer or prepolymer as is used in [part 1] (see page 4, lines 23-28). According to appellant O, D1 thus discloses the use, in place of the monomer A in part 2 of the composition, of the prepolymer "monomer B" (shown on page 6 and used in part 1 of the example), which would be a vinyl polymer. The Board does not share this

opinion. The embodiment on which appellant O relies results from the replacement of one feature of the example of D1 (monomer A) with an equivalent which may be conceptually covered by the general part of D1 (monomer B belongs to the monomers/prepolymers used in part 1). However such an embodiment is not individualised in D1. D1 does not, directly and unambiguously, disclose any embodiment where monomer B is present in the part 2 coated on the spatula.

Accordingly, the main request satisfies the criteria of novelty.

## 2.2 Inventive step

2.2.1 The aim of the invention is to provide a method for producing a kit of parts which facilitates the production and application of an adhesive composition, especially in the dental field. The kit of parts should in particular allow for a consecutive application of an adhesive composition to different surfaces, without a significant drop in performance (see paragraphs [0001], [0012] and [0013] of the patent).

2.2.2 D1 discloses a two-part composition for the application of e.g. a dental filling composition. D1 thus addresses a similar technical problem. The opposition division considered D1 to represent a suitable starting point for the assessment of inventive step. The Board concurs.

As established above (see 2.1), part 1 of the two-part composition of D1 comprises:

- a polymerizable component with an acid group (methacrylic acid), and
- an initiator (N,N-dimethyl-p-toluidine);

and part 2 comprises:

- an activator (benzoyl peroxide), and
  - monomer A, which acts as adhesive on the applicator.
- D1 also discloses the steps of bringing part 2 in contact with the applicator (spatula) and drying to form a coating or film (see page 6 lines 12-19). Monomer A can accordingly be regarded as a film former, albeit not one as defined in claim 1.

According to appellant P, from a structural point of view D1 does not qualify as closest prior art, because the benzoyl peroxide used in part 2 of D1 would be understood as initiator and the N,N-dimethyl-p-toluidine as activator. For the reasons given above (see 2.1.4), the Board does not share this opinion. In addition, D1 considers both options, i.e. either the amine or the peroxide is applied to the mixing tool while the other is incorporated in the paste (see page 4, lines 23-29).

- 2.2.3 The subject-matter of claim 1 of the main request differs in that the film former has a molecular weight from 1000-1200000 and is selected from natural film formers, semi-synthetic film formers, cellulose derivatives, poly(meth)acrylates, vinyl polymers, polyurethanes, mixtures and combinations thereof.
- 2.2.4 According to appellant P, the technical effect is a sustained release of the activator during application of the adhesive composition, allowing for the consecutive application of an adhesive composition without significant drop in performance. However, it is not demonstrated that such a technical effect results from the choice of the film former from the broad list and range of molecular weights of claim 1. The examples

of the patent compare an inventive kit using hydrolysed polyvinyl alcohol as film former, with a kit in which part B contains only the activator but does not include any monomer or oligomer with adhesive properties. The comparison is thus not made with the closest prior art.

- 2.2.5 Accordingly the objective technical problem is the provision of a method for producing further kits of parts allowing for application of an adhesive composition to (dental or orthodontic) surfaces.
- 2.2.6 D1 generally considers that the catalyst may be affixed to the mixing tool with the aid of an adhesive, or binder, which is compatible with the dental filling composition (see page 4, lines 14-17). D1 also generally considers that the binder may be one of the coreactive materials (i.e. one of the components to be (co)polymerised), or an additional coreactive material, or a nonreactive material which is compatible with the reactive system (see page 2 line 37 to page 3, line 3).

The skilled person looking for alternatives to the kit of D1 would consider replacing monomer A in the example of D1 with adhesive components used for this purpose in similar kits, such as the carboxy methyl cellulose (CMC) or the methacrylate polymers mentioned in D2 (see page 3, lines 82-86 and 95-97). These adhesive components are employed in D2 as film formers to bind the same type of catalysts (peroxides, see D2, page 3, line 74-82) to a similar surface (D1: polypropylene, see page 6, line 14; D2: polyethylene, see page 3, lines 35-36) for later use in the preparation of similar dental adhesive compositions. The fact that these film formers are used in D2 in such a closely related context clearly show that they meet the condition stated in D1 that the adhesive be compatible

with the reactive system. Contrary to appellant P's opinion, there is no demonstration that the film formers in D2 are otherwise used as encapsulating material, and no reason for the skilled person to expect that these film formers would lead to the drawbacks mentioned in D1 on page 2, lines 22-29 in relation to encapsulating materials (namely mechanical weakness in the cured filling).

Appellant P pointed out that, among the film formers listed in D2, epoxy resins are described as preferred and are the only exemplified alternative. However, the disclosures of D1 and D2 are not limited to their preferred embodiments. The question here is not whether the skilled person, starting from D1, would consider the use of the other adhesives of D2 (e.g. CMC, polymethacrylates) in the hope to achieve improved or defined properties for the kit, or would be led to these adhesives preferably than others, but whether the skilled person would anticipate that these adhesives would solve the technical problem of simply providing an alternative. This question can be answered in the affirmative, because D2 teaches that film formers such as CMC or polymethacrylates can be used for that purpose in dental kits.

The choice of the claimed range of molecular weights is not shown to result in any particular technical effect, such that this arbitrary selection does not involve an inventive step.

Accordingly, the main request does not meet the requirements of inventive step.

3. Auxiliary requests 1-6



3.1 In claim 1 of auxiliary requests 1-4, the range for the molecular weight of the film former is amended respectively to 10000-1200000, 10000-400000, 20000-400000 and 20000-200000.

In the Board's view, these amendments do not change the fact that no technical effect is demonstrated to arise from the differentiating features over D1 (see 2.2.4 above). Appellant P argued that increased molecular weights would be expected to have an impact on the release properties of the film. However, as argued by appellant O, the nature and structure of the film former and activator can also be expected to influence the release properties of the film. No conclusion can be drawn as to an effect of the limited molecular weight ranges over the broad range of film formers listed in claim 1.

Hence the problem remains the provision of a method for producing further kits of parts allowing for application of an adhesive composition to (dental or orthodontic) surfaces.

The ranges specified in auxiliary requests 1-4 do not depart from the molecular weights of film formers known from e.g. D2, considering the common general knowledge reflected in D9 (see the last paragraph on page 340, Tragacantha including a bassorin component with a MW of 100000), D10 (alginate/alginate acid with MW of 48000-186000) or D11 (see page 513, last paragraph on the right, acrylic resin Eudragit having a MW above 100000), or document D12 (see page 9, Table 1, carboxymethylcellulose Cekol CMC and Finnfix CMC with MW of 80000). Since no effect is associated with the choice of film formers with such molecular weights, the

amended ranges are also regarded as arbitrary selections from the prior art.

Accordingly, none of the auxiliary requests 1-4 satisfy the criteria of inventive step.

3.2 Claim 1 of auxiliary request 5 contains the additional feature that the activator is dissolved or dispersed in the film former. The Board shares the opinion of the opposition division that the process disclosed in D1 for the production of the film inevitably leads to a dissolution or dispersion of the catalyst in the binder (see page 4, lines 30-36). Furthermore, the formation of a film wherein the catalyst is dissolved or dispersed is explicitly mentioned in D1 (see page 3, line 36, to page 4, line 1). Consequently, the considerations set out above regarding inventive step over D1 also apply to auxiliary request 5.

3.3 The deletion, in claim 1 of auxiliary request 6, of the packaging device, i.e. the limitation of the surface to that of an applicator, does not modify the conclusion as to inventive step over D1, because it does not introduce any additional differentiating feature over D1, which uses a spatula. The skilled person would combine the teaching of D1 with that of D2 for the reasons set out above (see 2.2.6)

3.4 Since none of the auxiliary requests 1-6 meet the requirements of Article 56 EPC, the question of their admittance into the proceedings does not need to be addressed.

4. Auxiliary request 7

4.1 Admittance

Appellant P submitted auxiliary request 7 for the first time together with its grounds of appeal filed on 29 May 2019. The admittance of auxiliary request 7 is subject to the provision of Article 12(4) RPBA 2007, which gives the Board discretion not to admit, on appeal, requests that could have been presented in the opposition proceedings.

As compared with claim 1 as granted, claim 1 of auxiliary request 7 results from the limitation of the molecular weight to the range 20000-200000, the limitation of the surface to that of an applicator, and the addition of the feature that "the activator comprises at least one of the following moieties: barbituric acid, barbituric acid salt, thiobarbituric acid, thiobarbituric acid salt, sulfinic acid, acid salt or sulfinic acid ester". These amendments are similar to amendments proposed in the first instance proceedings, such that this request does not amount to creating a fresh case in appeal. In addition, no compelling reasons can be identified why these requests should have been filed in the first instance proceedings, considering in particular that the preliminary opinion of the opposition division was that the opposition should be rejected.

Appellant O suggests that auxiliary request 7 is not convergent with the higher ranking requests. The Board note that claim 1 of auxiliary request 7 incorporates all the limitations introduced in claim 1 of auxiliary request 1-6, apart from the feature that "the activator is dissolved or dispersed in the film former" of claim 1 of auxiliary request 5, which was found not to further differentiate from D1. The Board does not

regard the filing of auxiliary request 7 as amounting altogether to a new line of defence.

Accordingly, the Board admits auxiliary request 7.

#### 4.2 Article 123(2) EPC

##### 4.2.1 Appellant O firstly objects to the combination of the molecular weight range of 20000-200000 with the limitation to an applicator as surface. In appellant O's opinion, this amounts to selections from several independent lists, which infringes Article 123(2) EPC.

The Board does not share this view. The claimed molecular weight range is the narrowest of the convergent list of three ranges disclosed on page 16, lines 2-4, of the application as filed (namely 1000-1200000, 10000-400000, and 20000-200000). The applicator is disclosed on page 23 (lines 15-16) as one of only two surfaces to which the components are applied, namely an applicator or a packaging device, and is the only one of these two alternatives to be exemplified in the application as filed. Accordingly, the Board does not consider the claimed combination to represent added subject-matter.

##### 4.2.2 Appellant O had also objected to dependent claim 6 of the main request, which is present as dependent claim 5 in auxiliary request 7. The Board however shares the opinion of the opposition division that this subject-matter, referring back to claim 1, is directly and unambiguously derivable from claims 15, 1, 6 and 7 together with pages 16 (lines 2-3) and 23 (lines 15-16) of the application as filed. The amounts recited in claim 5 of auxiliary request 7 are given relative to the weight of the whole composition. These amounts need

not add up to 100% since the presence of further components in the composition is not excluded. At any rate, and contrary to appellant O's position, the applicator and/or packaging device constitute the surface on which some components are applied, and cannot be seen as components of the composition.

Accordingly, auxiliary request 7 meets the requirements of Article 123(2) EPC.

#### 4.3 Clarity

- 4.3.1 Appellant O considers that the new range for the molecular weight of the film former introduced in claim 1 of auxiliary request 7 lacks clarity (see appellant O's grounds of appeal, section 3 on pages 5-6; letter of 12 December 2019, page 9). According to appellant O, average molecular weights of polymers can be of different types (e.g. number average, weight average, etc...) and can be determined by different methods, none of which are specified in claim 1.

However, the lack of clarity alleged by appellant O concerns the determination of the molecular weight itself. This parameter was already present in claim 1 as granted. Amending the range for this molecular weight (namely from 1000-1200000 to 20000-200000) does not on itself introduce a lack of clarity. Thus the alleged lack of clarity is not introduced by the amendments and is not open to scrutiny under Article 84 EPC (following G 3/14).

- 4.3.2 Appellant O furthermore objects to dependent claim 4 of auxiliary request 7, in which the initiator may, in one alternative, be a reducing agent. According to appellant O, this reducing agent covers e.g. sodium

sulfinate (in light of paragraph [0099] of the description), with the consequence that the initiator could be identical to the activator now listed in independent claim 1.

However, this alleged inconsistency does not result from the amendments, since claim 5 as granted allowed for exactly the same combination by referring to "any of the preceding claims" including claim 4 as granted. Thus, no lack of clarity is introduced by the amendments in this respect either.

#### 4.4 Sufficiency of disclosure

##### 4.4.1 Admittance of the new arguments submitted by the appellant O on pages 8-9, section 5.1 of its grounds of appeal

In its grounds of appeal (see pages 8-9, section 5.1), appellant O raised a new objection of insufficiency of disclosure against the patent in the form upheld by the opposition division. In its reply to appellant P's appeal, dated 12 December 2019 (see page 8, section 2.4; page 10), appellant O maintains this objection against all pending requests. According to appellant O, the invention could not be carried out for lack of indication as to the method for measuring the molecular weight of the film former.

During the proceedings before the opposition division, this objection of insufficiency of disclosure was not raised, and the determination of this molecular weight was not discussed. The submission at appeal stage of this objection, including the alleged facts supporting it, is not in reaction to any development in the first instance proceedings, but instead constitute an attempt

to bring a fresh case in appeal. Furthermore, the objection is not *prima facie* convincing. Appellant O submits that the molecular weight parameter is unclear, but does not explain why this lack of clarity should be such that the skilled person cannot carry out the invention.

Accordingly, the Board does not admit this objection into the proceedings, pursuant to Article 12(4) RPBA 2007.

#### 4.4.2 Sufficiency of disclosure, film former

Claims 7 and 8 of auxiliary request 7 pertain to the use of the kit of parts obtained by the method of claim 1 for producing an adhesive composition. Appellant O contends that some of the film formers recited in claim 1, such as polyurethanes (see the wikipedia article D8, page 9), will result in an undissolvable film from which the activator will not be released or resolved upon combination with part A. As a result, no hardenable composition will be produced. The feature "adhesive" however supposes that the composition be hardenable.

The Board shares the opinion of the opposition division that the patent gives sufficient guidance as to the film formers and the activator's re-dissolution from the film former (see paragraph [0061]). To the extent that some polyurethanes would be well-known to be unsuitable for this use in dentistry, the skilled person would not choose these as film formers when putting the invention claimed in claims 7 and 8 into practice.

Accordingly, the requirements of sufficiency of disclosure are met.

4.5 Inventive step

4.5.1 Starting from D1

4.5.2 In claim 1 of auxiliary request 7, the activator is limited to components comprising at least one of the following moieties: barbituric acid, barbituric acid salt, thiobarbituric acid, thiobarbituric acid salt, sulfinic acid, sulfinic acid salt or sulfinic acid ester.

Consequently, the subject-matter of claim 1 of auxiliary request 7 differs from the teaching of D1 both by the film former and by the above activator.

The objective technical problem is the provision of a method for producing further kits of parts allowing for application of an adhesive composition to (dental or orthodontic) surfaces.

According to appellant O, the skilled person, starting from the example of D1, would:

- firstly exchange the catalytic components in D1, i.e. incorporate the benzoyl peroxide in part 1 of the two-part dental filling composition, and have the N,N-dimethyl-p-toluidine in part 2 coated onto the spatula, as suggested in D1 on page 4 (lines 23-29);
- replace the N,N-dimethyl-p-toluidine with a sulfinic or barbituric acid, which are shown in D3 as activators to be impregnated into an applicator for related kits for dental adhesives (see column 3, lines 27-42, component (E); column 9, lines 34-41); and



- replace the film former of D1 with any of those shown in D2.

This reasoning supposes that the skilled person takes several steps and combine the teaching of D1, D2 and D3. D1 however incites the skilled person to take a cautious approach by limiting the film formers to those who are compatible with the reactive system (see page 2 line 37 to page 3, line 2). There is no indication in the prior art that for a modified reactive system including the sulfinic or barbituric acid mentioned in D3, the film formers listed in D2 would still be compatible, especially considering that these film formers are only disclosed in the context of peroxides (see page 3, lines 74-100). Accordingly, the Board considers that the skilled person could not carry out these steps without exercising an inventive skill.

#### 4.5.3 Starting from D3

Appellant O has additionally raised an objection of lack of inventive step using D3 as starting point.

D3 discloses a kit for a dental adhesion (see column 3, lines 26-42) comprising in particular:

- a radical polymerizable monomer with an acid group (component (A)),
- a photo sensitizer and/or a peroxide (component (C), which can correspond to the initiator of claim 1)
- a sulfinic or barbituric acid or salt (component (E), i.e. an activator in the sense of claim 1, see paragraph [0106] of the patent).

This activator (E) is impregnated into an applicator, the other components are contained in a vessel, and the activator is brought into contact with the other

components right before use. In the examples of D3, the activator is impregnated into a sponge (see column 15, line 63 to column 16, line 9). D3 also states that the activator (E) is dissolved or dispersed in a monomer (B) or/and organic solvent (D) or/and water (F), and can be "impregnated into, adhered to or adsorbed to an applicator", such as a sponge, a mixing pad or a spatula, which is brought into contact with the composition upon use (see D3, column 10, lines 40-49).

D3 does not disclose a film former having the molecular weight and selected from the list recited in claim 1 of the main request. Additionally, the Board shares appellant P's view that D3 also fails to disclose the use of any film former to fix the activator on the surface of an applicator or packaging device. D3 does not indicate how component (E) should be adhered to the applicator. No step of drying the surface to form a film is shown in D3. Lastly, there is no basis in D3 for appellant O's assumption that the optional polymer mentioned in column 12 (lines 54-58) of D3 should function as film-forming adhesive .

In view of the Board's conclusion (see below), the question as to whether these differentiating features lead to a particular effect can be left unanswered. The problem may be seen as the provision of a method for producing further kits of parts allowing for application of an adhesive composition to (dental or orthodontic) surfaces.

The skilled person starting from the kit of D3, where a sulfinic or barbituric acid activator is impregnated into an applicator such as a sponge, has no incentive to depart from this solution and incorporate the same activators in a film formed using the adhesives shown

in D2, especially considering that these adhesives are only disclosed in D2 in the context of different catalysts (namely peroxides).

Accordingly, the subject-matter of auxiliary request 7 meets the requirements of inventive step.

## Order

### For these reasons it is decided that:

The decision under appeal is set aside.

The case is remitted to the opposition division with the order to maintain the patent on the basis of the claims of auxiliary request 7 filed with the grounds of appeal, and a description to be adapted thereto.

The Registrar:

The Chairman:



B. Atienza Vivancos

A. Usuelli

Decision electronically authenticated