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# Datasheet for the decision of 30 November 2020

**Case Number:** T 0523/17 - 3.3.03

**Application Number:** 10800824.4

**Publication Number:** 2516493

**IPC:** C08F230/02, C08F220/38

**Language of the proceedings:** EN

**Title of invention:**
NETWORK COPOLYMER CROSSLINKED COMPOSITIONS AND METHODS OF MAKING THE SAME

**Patent Proprietor:**
Momentive Performance Materials Inc.

**Opponent:**
Wibbelmann, Jobst

**Relevant legal provisions:**
EPC Art. 54, 56, 84, 123(3)

**Keyword:**
Novelty - (yes)
Inventive step - Main request, Auxiliary request 1 (No) - auxiliary request 2 (yes)
Amendments - allowable (yes)
Claims - clarity (yes)

**Decisions cited:**
G 0002/88

Europäisches Patentamt
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**Case Number: T 0523/17 - 3.3.03**

# D E C I S I O N
# of Technical Board of Appeal 3.3.03
# of 30 November 2020

| | |
|---|---|
| **Appellant:** (Opponent) | Wibbelmann, Jobst<br>Wuesthoff & Wuesthoff<br>Patent- und Rechtsanwälte<br>Schweigerstrasse 2<br>81541 München (DE) |
| **Respondent:** (Patent Proprietor) | Momentive Performance Materials Inc.<br>260 Hudson River Road<br>Waterford, NY 12188 (US) |
| **Representative:** | Müller-Boré & Partner<br>Patentanwälte PartG mbB<br>Friedenheimer Brücke 21<br>80639 München (DE) |
| **Decision under appeal:** | **Interlocutory decision of the Opposition Division of the European Patent Office posted on 16 January 2017 concerning maintenance of the European Patent No. 2516493 in amended form.** |

**Composition of the Board:**

| | |
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| **Chairman** | D. Semino |
| **Members:** | D. Marquis |
| | C. Brandt |

## Summary of Facts and Submissions

I. The appeal by the opponent lies from the decision of the opposition division posted on 16 January 2017 concerning maintenance of European patent No. 2 516 493 in amended form on the basis of auxiliary request 2 filed during the oral proceedings before the opposition division on 6 October 2016.

II. Claims 1 and 4 of the patent as granted read as follows:

"1. A network composition comprising the reaction product of:

i) at least one anionic polymerizable ethylenically unsaturated monomer (I) selected from the group consisting of
$[CH_2=C(R_3)C(O)OX_a(C_2H_4O)_b(C_3H_6O)_c(C_4H_8O)_d]_pP(O)(OY)_q(OZ)_r$
where
$R_3$ = H or alkyl of 1 to about 6 carbon atoms;
X= alkyl, aryl, or alkaryl diradical connecting group of 0 to about 9 carbon atoms;
a is 0 to about 100;
b is 0 to 100;
c is 0 to 100;
d is 0 to 100;
q is 0 to 2;
r is 0 to 2;
p is 1 to 3 subject to the limitation that p+q+r = 3;
and
Y and Z is H, or metal ion;
and
$CH_2=C(R_3)C(O)OX_a,(C_2H_4O)_b,(C_3H_6O)_c,(C_4H_8O)_d,-SO_3-Y$

where
$R_3$=H or alkyl of from 1 to 6 carbon atoms;
X= alkyl, aryl, or alkaryl diradical connecting group of 0 to 9 carbon atoms;
a' is 0 to 100;
b' is 0 to 100;
c' is 0 to 100;
d' is 0 to 100;
Y is H, or metal ion; and

(ii) one or more additional monomers (II) selected from the group consisting of acrylic acid/acrylate, methacrylic acid/methacrylate, acrylamides, vinyl acetate and styrene, which are copolymerizable with (I); and

(iii) a cross-linking agent (III), capable of copolymerizing with (I) and (II)."

"4. The network composition of claim 1 wherein said composition comprises 40 to 99 weight percent based on the total weight of the monomers of said at least one anionic polymerizable ethylenically unsaturated monomer (I), 0.5 to 50 weight percent based on the total weight of the monomers of said additional monomers and 0.1 to 10 weight percent based on the total weight of the monomers of said cross-linking agent."

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

D3: WO 2008/087979 A1
D3': US 2010/0036075 A1
D8: EP 1 946 799 A2

IV. The decision of the opposition division was based on the patent as granted as main request, auxiliary request 1 submitted with letter of 5 March 2015 and auxiliary request 2 submitted during the oral proceedings. Claim 1 of auxiliary request 2 pertained to the use of a network composition as defined in granted claim 1 in cosmetics or personal care products. Claim 11 of auxiliary request 2 corresponded to claim 4 as granted.

V. As far as it is relevant to the present appeal, the decision of the opposition division with regard to auxiliary request 2 can be summarized as follows:

Article 123(3) EPC

Claims 1-10 were not open to objections under Article 123(3) EPC in accordance with decision G 2/88 of the Enlarged Board of Appeal (Point (ii) of the abstract and points 3-5 of the reasons). The requirements of Article 123(3) EPC were thus met.

Article 84 EPC

Claims 2-10 were use claims that depended on claim 1 and could not be understood as product claims directed to network compositions. The requirements of Article 84 EPC were thus also met.

Article 54 EPC

Claim 1 was novel over the network compositions of examples 1-5 of D8 which did not comprise an anionic polymerisable ethylenically unsaturated monomer (I) as defined in claim 1 of auxiliary request 2.

Article 56 EPC

Document D8 represented the closest prior art for claim 1. The compositions explicitly disclosed in D8 did not contain an anionic polymerizable ethylenically unsaturated monomer as defined in claim 1 of auxiliary request 2.

In the absence of a comparison with D8, the problem was formulated as the provision of alternative cross-linked compositions that could be used in cosmetics or personal care products.

D8 disclosed in paragraph 22 a list of 28 monomers among which there were 2 anionic polymerizable ethylenically unsaturated monomers as defined in the patent in suit. Two selections within D8 were however needed in order to arrive at a composition as defined in claim 1 of auxiliary request 2. D8 did not provide an incentive towards that double selection. Also, none of the prior art documents cited led to the claimed solution. Claim 1 of the main request met therefore the requirements of Article 56 EPC.

Claim 11 differed from D3' in that the network composition comprised the monomer (i) in an amount between 40 and 99 wt.-% and the cross linking agent (iii) in an amount between 0.1 and 10 wt.-%. Starting from D3’ the problem was the provision of alternative cross-linked compositions that could be used in cosmetics or personal care products. The reasoning and conclusion provided for claim 1 also applied to claim 11 of auxiliary request 2. The same conclusion applied to claim 20 directed to the process of manufacture of a network composition according to claim 11.

VI. The opponent (appellant) lodged an appeal against that decision.

VII. With the rejoinder to the statement setting out the grounds of appeal the patent proprietor (respondent) filed a main request which corresponded to the set of claims maintained by the opposition division (auxiliary request 2 filed during the oral proceedings before the opposition division) and auxiliary requests 1 to 4.

Claim 1 of auxiliary request 1 corresponded to claim 11 of the main request. Claim 1 of auxiliary request 2 corresponded to claim 1 of auxiliary request 1 for which the category was changed to a use in cosmetics or personal care products. Auxiliary request 2 did not contain any other independent claim.

VIII. The parties were summoned to oral proceedings. Issues to be discussed at the oral proceedings were then specified by the Board in a communication dated 16 January 2020.

IX. Oral proceedings were held on 30 November 2020, the respondent being present on the EPO premises and the appellant being connected remotely by videoconference.

X. The appellant's arguments, insofar as relevant to the decision, may be summarised as follows:

Main request

Novelty over D8

- Claim 1 of the main request lacked novelty over D8. In particular, the compositions disclosed in

examples 7 and 9 of that document contained acrylate monomers and a crosslinking agent that corresponded to the monomers (II) and (III) of the patent in suit. The passage "In addition to the above monomers (i), (ii) and (iii), other monomers may be used in such an amount that they do not adversely affect the property of the copolymer" in paragraph 22 of D8 was a motivation for additionally using two of the listed monomers (2-methacryloyloxyethyl phosphate or 2-methacryloyloxypropyl phosphate) in the compositions of examples 7 or 9 so as to obtain compositions falling within the ambit of claim 1 of the main request.

Inventive step over D8

Claim 1

- Claim 1 of the main request differed from the compositions of any of the examples 1, 7 and 9 of D8 seen as starting point for the assessment of inventive step in the presence of a monomer of formula (I). It was not established that that difference resulted in any advantage over the compositions of D8. Comparative samples 11 and 12 of the patent in suit did not represent the compositions disclosed in D8. In particular, it was not shown that the commercially available components Hispagel 200 and Pemulen TR-2 contained monomers corresponding to monomers (II) and (III) defined in claim 1 of the main request. Absent of any benefit over D8, the problem was the provision of alternative compositions. It was obvious to modify the compositions of examples 1, 7, and 9 of D8 by using an additional monomer (corresponding to

monomer (I) of claim 1 of the opposed patent) as suggested in paragraph 22 of D8. Claim 1 of the main request lacked therefore inventive step over D8.

Claim 11

- The arguments provided for claim 1 of the main request also applied to the objection against claim 11. Also, the patent in suit did not establish that the use of monomers (I) to (III) in amounts as defined in claim 11 was advantageous over the compositions of D8. Claim 3 of D8 also disclosed ranges of monomers that overlapped with the ranges defined in claim 11 of the main request. Selecting the minimum amounts of monomers disclosed in claim 3 of D8 allowed for the presence of up to 50 wt.-% of other monomers, such as the monomers referred to in paragraph 22. Therefore also claim 11 of the main request lacked inventive step over D8.

Auxiliary request 1

Inventive step

- The arguments of inventive step over D8 provided against claim 11 of the main request equally applied to claim 1 of auxiliary request 1 which was identical thereto.

- In addition to that, D3 could also be seen as a reasonable closest prior art for claim 1 of auxiliary request 1. Examples 1-1 to 1-5 of D3 disclosed compositions containing MDP (10-methacryloyloxydecyldihydrogenphosphate) corresponding to monomer (I), alongside other

monomers corresponding to monomers (II) and (III) of claim 1 of auxiliary request 1. It was not established that the selection of specific amounts of monomers (I), (II) and (III) resulted in any effect over the compositions of D3. D3 taught, in paragraphs 20, 73 and 80, amounts of monomers that overlapped with the ranges defined in claim 1 of auxiliary request 1. It was thus obvious to use the monomers disclosed in the examples of D3 in amounts according to claim 1 of auxiliary request 1.

Auxiliary request 2

Article 123(3) EPC and Article 84 EPC

- Claims 1-10 of auxiliary request 2 were not "use claims", since they did not indicate "a particular purpose", as required by G 2/88, besides the technical teaching to include the network compositions into particular products. Gelling or any other effect was not indicated as defining the purpose of the claimed use. In that regard, including the network compositions into a product represented a process for preparing said product, i.e. cosmetics or personal care products.

- The protection conferred by such a process of manufacture was the direct product of the process, i.e., the cosmetics or personal care products. Since the granted claims were not directed to cosmetics or personal care products, the amended claims extended beyond the scope of the granted claims, contrary to Article 123(3) EPC.

- In any case, the claims were at least ambiguous regarding the "particular purpose" to which they

referred, contrary to Article 84 EPC. That lack of clarity was compounded by the fact that the quantities of network composition to be used in claim 1 of auxiliary request 2 were not defined.

Inventive step

- The arguments submitted with regard to lack of inventive step of claim 11 of the main request over D8, which equally applied to the objection of lack of inventive step of claim 1 of auxiliary request 1 over D8, were also valid for the objection against claim 1 of auxiliary request 2.

- In addition to that, D3 was also a reasonable starting point for the assessment of inventive step of claim 1 of auxiliary request 2. Besides, claim 1 of auxiliary request 2 did not particularly limit the amount of network composition used in the cosmetic or personal care applications and the function of the network composition according to D3 was the same as that disclosed in D8 and in the patent in suit. In that regard, it was not established that any (small) amount of network composition according to claim 1 of auxiliary request 2 had an effect relevant to its use in cosmetic or personal care applications. It was thus not plausible that the network compositions according to the patent in suit would have an effect over the whole scope of claim 1 of auxiliary request 2. Besides, D8 already provided a teaching regarding the use of these compositions as thickening agent in cosmetic or personal care applications. Claim 1 of auxiliary request 2 thus lacked inventive step over D3.

XI. The respondent's arguments, insofar as relevant to the decision, may be summarised as follows:

Main request

Novelty over D8

- The compositions disclosed in the examples of D8 did not contain a monomer falling under the definition of monomer (I) according to claim 1 of the main request. A multiple selection within D8 was necessary to arrive at a composition falling within the ambit of claim 1 of the main request. The main request was thus novel over D8.

Inventive step over D8

Claim 1

- The compositions of the examples of D8 did not disclose the presence of monomer (I). Starting from the examples of D8 as closest prior art, the problem was the provision of an alternative composition with silky feel and proper cushioning as shown in examples 11 and 12 of the patent in suit. These examples of the patent in suit established the presence of an effect by comparison with compositions containing Hispagel 200, a copolymer containing glyceryl polyacrylate and glyceryl corresponding to monomers (II) and (III) as defined in claim 1, or Pemulen TR-2, a copolymer containing acrylates and a $C_{10-30}$ alkyl acrylate crosspolymer corresponding to monomers (II) and (III). Even if the patent in suit did not contain examples of compositions corresponding to the compositions of D8, it was nevertheless shown that

silky feel and cushioning were achieved in the patent in suit. There was no incentive in D8 to select 2-methacryloyloxyethyl phosphate or 2-methacryloyloxypropyl phosphate from the list of 28 monomers disclosed in paragraph 22 in order to improve the silky feel and cushioning properties of network compositions. Claim 1 of the main request was therefore inventive over D8.

Claim 11

- Starting from the same examples 1, 7 or 9 of D8 as closest prior art, there was no teaching in D8 to use monomers corresponding to monomers (I), (II) and (III) according to claim 11 of the main request in the amounts defined in that claim. Even considering the ranges of monomers disclosed in claim 3 of D8, there was no teaching in D8 that would have led a skilled person to use any of 2-methacryloyloxyethyl phosphate or 2-methacryloyloxypropyl phosphate as dominant monomer in the compositions of D8. On the contrary, paragraph 22 of D8 taught that any additional monomer should be used in amounts such that it would not adversely affect the property of the copolymer. Claim 11 of the main request was thus inventive over D8.

Auxiliary request 1

Inventive step

- The arguments of inventive step over D8 provided against claim 11 of the main request equally applied to claim 1 of auxiliary request 1 which was

identical thereto.

- Besides, D3 concerned dental applications that were not cosmetic or personal care applications as in the patent in suit. D3 was therefore not a reasonable closest prior art document.

Auxiliary request 2

Article 123(3) EPC and Article 84 EPC

- G 2/88 and in particular section 5 of that decision "The discovered use of such compound or composition will normally be described in the patent, but may not be expressly claimed" made clear that the effect resulting from the composition did not need to be incorporated in the claim if it was described in the patent in suit. In that regard, paragraph 14 of the patent in suit disclosed the effect in the form of its stability and syneresis resistance. The indication of cosmetics or personal care products was therefore sufficient to define the use. The modification in claim 1 of auxiliary request 2 did not lead therefore to a deficiency under Article 123(3) EPC and Article 84 EPC.

Inventive step

- The arguments submitted with regard to inventive step of claim 11 of the main request over D8, which equally applied for claim 1 of auxiliary request 1 over D8, were also valid for the objection against claim 1 of auxiliary request 2.

- Claim 1 of the auxiliary request 2 was directed to a use for a specific purpose in a specific domain

and the patent in suit showed effects of low tack, silky feel and cushioning that were not addressed in D3. D3 could thus not be considered as closest prior art for that claim.

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

XIII. The respondent requested that the appeal be dismissed, or that the patent be maintained in amended form on the basis of one of the auxiliary requests 1 to 4 filed with the reply to the statement of grounds of appeal.

## Reasons for the Decision

Main request

1. Novelty over D8

1.1 Claim 1 of the main request corresponds to claim 1 of auxiliary request 2 as maintained by the opposition division that was found to be novel over D8. The opposition division acknowledged novelty over D8, in particular over its examples 1, 7 and 9, on the grounds that the compositions disclosed in these examples did not contain an anionic polymerizable ethylenically unsaturated monomer of formula (I) as defined in operative claim 1 (Section 17, page 10 of the contested decision).

1.2 The objection of lack of novelty over D8 was pursued in appeal and at the oral proceedings before the Board in view in particular of examples 7 and 9 read in combination with the passage on paragraph 22 of that document.

1.3 Examples 7 and 9 of D8 (paragraph 85) disclose the preparation of aqueous dispersions by emulsion polymerization involving acrylate monomers (ethyl acrylate, methyl acrylate and methacrylic acid) a crosslinking agent (an organopolysiloxane represented by formula (11) disclosed in Table 2), an organopolysiloxane macromer as well as several emulsifiers and catalysts (Table 2). The description of the aqueous emulsion polymerization disclosed in paragraph 85 does not mention the possible presence of any other monomer in the composition.

1.4 Paragraph 22 of D8 discloses that in addition to the monomers (i), (ii) and (iii) in the copolymers according to D8, other monomers could be used in such an amount that they would not adversely affect the property of the copolymer. Also, two of the additional monomers listed in paragraph 22, 2-methacryloyloxyethyl phosphate and 2-methacryloyloxypropyl phosphate are anionic polymerizable ethylenically unsaturated monomers (I) according to operative claim 1. That passage suggesting the presence of additional monomers however is not linked to any of the examples of D8. It belongs to the general disclosure of the invention without specifically pointing to the particular compositions of examples 7 or 9. It is thus not directly and unambiguously derivable therefrom that the different classes of additional monomers listed in paragraph 22 and in particular the two relevant ones could equally be seen as being part of the preparation disclosed in examples 7 and 9 of D8. It is also unknown whether the two monomers listed at the end of paragraph 22 could readily be polymerized by the process disclosed in examples 7 or 9 and lead to a copolymer of satisfying property as required in paragraph 22. Therefore a direct and unambiguous disclosure of

compositions falling under those used in claim 1 cannot be derived from the examples of D8 in the light of paragraph 22.

1.5 The Board concludes that the novelty attack based on the examples of D8 in combination with the description does not succeed.

2. Inventive step of claim 1 over D8

2.1 Claim 1 of the main request pertains to the use of a network composition in cosmetics or personal care products. Claim 1 of the main request corresponds to claim 1 of auxiliary request 2 found to be inventive over D8 in the contested decision. D8 was chosen as the closest prior art with respect to that claim in the contested decision and both parties in appeal have not disputed that choice. Since D8 concerns the same purpose as the patent in suit, the Board does not see a reason to deviate from D8 as the closest prior art.

2.2 Examples 7 and 9 of D8 were seen as particularly relevant as starting point for the assessment of inventive step. Claim 1 of the main request differs from examples 7 and 9 of D8 in that an anionic polymerizable ethylenically unsaturated monomer (I) was used in the preparation of the network composition in accordance with the novelty analysis (see paragraphs 1.3 and 1.4 above) and the position of the parties.

2.3 The contested decision defined the problem to be solved over D8 as "to find an alternative crosslinked composition that could be used in cosmetics or personal care products" (section 18.1.1.2 on page 12). By contrast, the respondent contended at the oral proceedings before the Board that the problem over D8

was the provision of an alternative composition with silky feel and proper cushioning. The respondent based their formulation on examples 11 and 12 of the patent in suit.

2.4 While the problem formulated by the respondent does not *per se* appear to differ fundamentally from that of the contested decision, both problems being referred to as the provision of an alternative composition to those according to D8, the respondent appeared to consider at the oral proceedings before the Board that their formulation of the problem implied that the network compositions according to claim 1 of the main request were improved with regard to their properties over the compositions of D8. The question that had to be answered in that respect was whether evidence was provided for such an improvement.

2.5 According to the case law of the boards of appeal, alleged advantages to which the patent proprietor merely refers, without offering sufficient evidence to support the comparison with the closest prior art, cannot be taken into consideration in determining the problem underlying the invention and therefore in assessing inventive step (Case Law of the Boards of Appeal, 9th Edition, July 2019, I.D.4.2).

2.6 In that regard, the respondent referred to comparative sample 11 in Table XI and comparative sample 12 in Table XIII (both tables in the patent in suit) which, in their view, could be seen as a fair representation of the compositions disclosed in the examples of D8. It was also argued that the polymer compositions Hispagel 200 in Table XI and Pemulen TR-2 in Table XIII were copolymers that contained monomers (II) and (III) but did not contained monomer (I), such that these

copolymers were appropriate representations of D8 and fair comparisons with compositions according to operative claim 1.

2.7 It is however apparent from the data made available in the examples of the patent in suit that comparative samples 11 and 12 do not only differ from the copolymers of samples 11-1 to 11-5 and sample 12 respectively in the absence of an anionic polymerizable ethylenically unsaturated monomer (I) but also in that the copolymers contain different monomers altogether. Indeed, the compositions of samples 11-1 to 11-5 and 12 are based on copolymers of acrylic acid and/or polypropylene glycol mono-methacrylate, while Hispagel 200 is based on glycerine and glyceryl polyacrylate (Table XI) and Pemulen TR-2 is based on an unspecified mixture of acrylates / $C_{10-30}$ alkyl acrylate crosspolymer. Also, the amounts of the components forming the copolymers of the products Hispagel 200 and Pemulen TR-2 are unknown so that it can also not be concluded that these amounts would be comparable to those used in the examples of the patent in suit.

2.8 It follows that any effect resulting from the use of network compositions according to samples 11-1 to 11-5 or 12 cannot be solely attributed to the sole distinguishing feature over the closest prior art, namely the use of an anionic polymerizable ethylenically unsaturated monomer (I), but can in principle be causally linked to any difference with the copolymers of the comparative samples (e.g. the nature and amounts of any of the other monomers present alongside the monomer corresponding to the anionic polymerizable ethylenically unsaturated monomer (I) according to operative claim 1). It can therefore not be concluded that the network compositions according to

operative claim 1 are characterized by the fact that they provide improved silky feel and cushioning by comparison to the compositions of D8.

2.9 In the absence of any fair and meaningful comparison of the compositions according to operative claim 1 with compositions according to the closest prior art, the problem that can be formulated over D8 is the provision of further network compositions for cosmetics and personal care products.

2.10 The question of obviousness of the solution to that problem was thus whether, starting from examples 7 or 9 of D8, a skilled person would have considered the addition of an anionic polymerizable ethylenically unsaturated monomer (I) as defined in operative claim 1 when aiming at providing further network compositions for cosmetics and personal care products.

2.11 D8 broadly pertains to aqueous compositions used for cosmetics characterized in that the composition comprises 0.5 to 50 wt.-%, based on weight of the composition, of a copolymer having main chains comprising the repeating units represented by the following formula (1), the repeating units represented by the following formula (2), and the repeating units represented by the following formula (3) as defined in paragraph 4 of D8, said main chains being crosslinked by a compound or oligomer having 2 to 6 (meth)acryl groups.

2.12 The compositions of D8 therefore are based on several monomers, disclosed as monomers (i) to (iii) in paragraphs 6, 10 and 15 and on a crosslinking agent. The monomers used in examples 7 and 9 of D8 (ethyl acrylate, methyl acrylate, methacrylic acid) are

according to monomers (i) and (ii), macromer 11 is according to monomer (iii) and an organopolysiloxane of formula (11) is used as a crosslinking agent (see Table 2). The compositions of examples 7 and 9 are thus according to the teachings of D8, with respect to which paragraph 22 indicates that in addition to monomers (i)-(iii) additional monomers can be used. Since 2-methacryloyloxyethyl phosphate and 2-methacryloyloxypropyl phosphate, which are according to the definition given for the anionic polymerizable ethylenically unsaturated monomers (I) in claim 1, are listed as possible options for these additional monomers, the Board finds that a skilled reader of D8 would have considered to add these monomers to any copolymer of D8 including those of examples 7 and 9. Paragraph 22 also mentions that these two monomers could be used in addition to monomers (i) to (iii) as long as they are used in amounts that would not adversely affect the property of the copolymer.

2.13 Since in operative claim 1 the anionic polymerizable ethylenically unsaturated monomer (I) can be used in any amount, the Board finds that a skilled person would have considered in view of the teaching of D8 alone to modify the compositions of its examples 7 and 9 by adding a small amount of 2-methacryloyloxyethyl phosphate or 2-methacryloyloxypropyl phosphate when aiming at providing further compositions, thereby arriving at a composition according to claim 1 without any inventive skill.

2.14 Claim 1 of the main request therefore lacks inventive step over D8.

Auxiliary request 1

3. Inventive step

3.1 Claim 1 of auxiliary request 1 relates to a network composition comprising the reaction product of monomers (I), (II) and crosslinking agent (III) as defined in claim 1 of the main request and additionally characterized in that said composition comprises 40 to 99 wt.-% based on the total weight of the monomers of said at least one anionic polymerizable ethylenically unsaturated monomer (I), 0.5 to 50 wt.-% based on the total weight of the monomers of said additional monomers and 0.1 to 10 wt.-% based on the total weight of the monomers of said cross-linking agent.

3.2 Claim 1 of auxiliary request 1 corresponds to claim 11 of the main request. The objection of lack of inventive step raised against claim 1 of the main request over D8 was pursued against claim 1 of auxiliary request 1 and it was contended by both parties during the oral proceedings before the Board that the arguments laid out in view of claim 11 of the main request equally applied to claim 1 of auxiliary request 1. Claim 1 of auxiliary request 1 also corresponds to claim 11 of auxiliary request 2 that was maintained by the opposition division and which was found to involve an inventive step over D3/D3’ in the contested decision (section 18.2 on page 14). An objection of lack of inventive step against claim 1 of auxiliary request 1 over D3/D3' was also pursued in appeal. Both attacks are addressed hereafter.

3.3 With regard to lack of inventive step over D8, that document concerns compositions that are structurally close to the compositions of the patent in suit (see

section 2.2 above with respect to claim 1 of the main request). D8 was seen as a reasonable closest prior art by the parties in appeal. Since the compositions according to D8 also relate to cosmetics, as in the patent in suit, the Board finds that D8 can be seen as a document representing the closest prior art for claim 1 of auxiliary request 1.

3.4 In particular, the compositions according to examples 7 and 9 of D8 were found to be particularly relevant. These compositions contain a total of 94.8 wt.-% (example 7) or 89.8 wt.-% (example 9) of monomers corresponding to monomer (II) according to operative claim 1 and 0.2 wt.-% (example 7) or 0.1 wt.-% (example 9) of crosslinking agent.

3.5 The compositions of claim 1 of auxiliary request 1 differ from the compositions of examples 7 and 9 of D8 in the presence, in the reacting mixture, of 40-99 wt.-% of anionic polymerizable ethylenically unsaturated monomer (I), which is not present in examples 7 and 9 of D8, and 0.5-50 wt.-% of monomers (II), which are instead present in amounts of 94.8 wt.-% (example 7) or 89.8 wt.-% (example 9) in D8.

3.6 It was concluded with regard to the main request under section 2.7-2.9 above that the patent in suit did not provide evidence of effects resulting from the presence of an anionic polymerizable ethylenically unsaturated monomer (I). Besides, the patent in suit does not contain evidence of an effect resulting from the choice of the amounts in monomer (I), (II) or (III) in the ranges defined in claim 1 of auxiliary request 1. No arguments was submitted by the respondent in that respect either (see argumentation in view of inventive step of auxiliary request 1 on page 9 of the rejoinder

and on page 6 of the letter dated 23 March 2020). It was also not shown nor argued that the combination of these two distinguishing features as such resulted in any effect over the closest prior art D8. The problem with respect to D8 is therefore the provision of further compositions for cosmetics or personal care products.

3.7 D8 teaches in paragraph 22 that other monomers, such as 2-methacryloyloxyethyl phosphate or 2-methacryloyloxypropyl phosphate that are anionic polymerizable ethylenically unsaturated monomers (I) according to operative claim 1, could be present alongside monomers (i) to (iii) in the general compositions of D8. With regard to the amounts of these additional monomers, D8 does not teach any range of amounts but merely indicates that the monomers, if they are added, should be present in amounts that do not adversely affect the property of the copolymer, which in view of the mention made at the end of paragraph 20 of D8 is interpreted to be the thickening capability of the produced copolymer in water. In that regard, D8 appears to imply that any additional monomer, if it is present in the copolymer, should not be present in a significant amount.

3.8 There is in D8 no indication that any of the additional monomers according to paragraph 22 that could be present alongside the monomers (i) to (iii) could be used in a minimum amount of 40 wt.-% as required in claim 1 of auxiliary request 1. Such a minimum amount would also be significant and predominant with respect to the monomers (i) to (iii) of the compositions according to D8. There is also no suggestion in D8 nor in the prior art discussed in appeal that an amount of additional monomer of 40-99 wt.-% in the compositions

of D8 would not affect the thickening capability of the produced copolymer and also result in a composition that could still be used for cosmetics or personal care applications. By contrast, operative claim 1 requires the presence of an anionic polymerizable ethylenically unsaturated monomer (I) in a minimum amount of at least 40 wt.-% in the composition used in cosmetics or personal care products.

3.9 The Board thus does not find in D8 nor in any of the documents cited in appeal an indication that an amount of 40-99 wt.-% of 2-methacryloyloxyethyl phosphate or 2-methacryloyloxypropyl phosphate listed in paragraph 22 of D8 or any other anionic polymerizable ethylenically unsaturated monomer (I) according to the definition of claim 1 of auxiliary request 1 could be used in copolymers compositions when looking for further compositions. In fact, using such a significant amount of these comonomers in the compositions of D8 would be a distortion of the teaching of D8 and would be the result of hindsight. The appellant did not provide further arguments in that respect either. A skilled person starting from D8 would therefore not have arrived at the subject matter of claim 1 of auxiliary request 1 in an obvious manner. The Board concludes that claim 1 of auxiliary request 1 is inventive over D8 as the closest prior art.

3.10 With regard to lack of inventive step over D3', it must first be acknowledged that D3' is a US patent document published on 11 February 2010, that is after the priority date of the patent in suit (23 December 2009). However, it was implicitly assumed by all parties that the content of D3, which is the corresponding PCT application published in Japanese on 24 July 2008 (and therefore being prior art under Article 54(2) EPC), is

the same as that of D3'. The Board has no reason to take a different approach and will refer in what follows to D3' as being a proper translation of D3.

3.11 It was argued in appeal that D3 was not the closest prior art for claim 1 of auxiliary request 1 since the object of D3 concerned dental applications and not cosmetics or personal care products as in the patent in suit. Claim 1 of auxiliary request 1 however concerns network compositions that are not limited to cosmetics or personal care products. Also, the problem addressed in the patent in suit is not limited to cosmetics or personal care products since paragraph 38 of the patent in suit mentions that the compositions disclosed can be used commercially as demulsifying agents, in agricultural compositions including fertilizers, in cosmetics and personal care products, in household cleaners, in coating compositions such as waxes and the like, in water processing apparatuses as well as other products. In that regard, the network compositions according to the patent in suit can be used for a wide variety of products that do not exclude dental applications. The Board does not see therefore a reason to depart from D3 as closest prior art for the composition of claim 1 of auxiliary request 1.

3.12 The contested decision found that any one of the examples 1.1 to 1.5 in Table 1 of D3 could be seen as the most relevant starting point for the assessment of inventive step. The compositions of these examples are obtained by reaction of 10-methacryloyloxydecyldihydrogenphosphate (MDP), a polymerizable monomer (C) according to D3 that is a compound according to the formula provided for the anionic polymerizable ethylenically unsaturated monomer (I) in claim 1 of auxiliary request 1, 2-

hydroxyethylmethacrylate (HEMA) in combination with erythritol dimethacrylate (EDMA), xylitol dimethacrylate (XDMA), sorbitol dimethacrylate (SDMA) or mannitol dimethacrylate (MDMA) as polymerizable monomers (A) and (B) which are combinations of monomers according to monomer (II) of operative claim 1 and bisphenol A diglycidyl methacrylate (Bis-GMA) as crosslinkable monomer (D) corresponding to the crosslinking agent (III) of operative claim 1 (Table 1). The compositions of examples 1.1 to 1.5 of D3 are therefore the reaction products of monomers falling under the definitions in operative claim 1.

3.13 Claim 1 of auxiliary request 1 differs from examples 1.1 to 1.5 of D3 in the amounts in monomer (I) (40-99 wt.-% in operative claim 1; 10 wt.-% of MDP in examples 1.1 to 1.5) and crosslinking agent (III) (0.1-10 wt.-% in operative claim 1; 30 wt.-% of Bis-GMA in examples 1.1 to 1.5).

3.14 The patent in suit does not contain experimental data showing an effect related to the ranges of amounts of monomer (I) and crosslinking agent (III) in the polymerizable network composition nor did the respondent argue that any effect could be derived therefrom. The problem that can thus be formulated is the provision of alternative network compositions.

3.15 D3 teaches in paragraph 20 that both the amount of polymerizable monomer (C) in the composition, which corresponds to the anionic polymerizable ethylenically unsaturated monomer (I) of operative claim 1, and that of polymerizable monomer (D), corresponding to the crosslinking agent (III) in operative claim 1, can independently be chosen in the range of 1 to 90 parts by weight with respect to 100 parts by weight of the

whole amount of polymerizable monomer components. The ranges disclosed for these two components in D3 thus overlap significantly with the ranges in anionic polymerizable ethylenically unsaturated monomer (I) (40-99 wt.-%) and crosslinking agent (0.1-10 wt.-%) defined in operative claim 1. The selection of amounts of both components of D3 in the range of overlap in order to merely provide a further composition cannot be seen as inventive in view of D3.

3.16 Claim 1 of auxiliary request 1 lacks therefore an inventive step over D3 as the closest prior art and does not meet on this basis the requirements of Article 56 EPC.

Auxiliary request 2

4. Article 123(3) EPC and Article 84 EPC

4.1 It was argued by the appellant that the formulation of claim 1 of auxiliary request 2 "Use of a network composition in cosmetics or personal care products [...]", since it was not based on an effect, had to be seen as a process claim for the preparation of cosmetics or personal care products. It was also stated with reference to Article 64(2) EPC that protection was conferred not only upon the claimed process of manufacture, but also upon the product resulting directly from the manufacture, in the case of claim 1 of auxiliary request 2, to cosmetics or personal care products. Since the granted claims of the patent in suit did not cover such products, the requirements of Article 123(3) EPC were not met.

4.2 The change of category from a product claim to a use claim and its consequences on the fulfilment of the

requirements of Article 123(3) EPC were decided upon in G 2/88 (OJ EPO 1990, 93, Questions (i) and (ii), points 3 to 5 of the decision). The precepts laid out in that decisions are applied to the present case hereafter.

4.3 Article 123(3) EPC provides that the European patent may not be amended in such a way as to extend the protection it confers. In that regard, when deciding upon the fulfilment of its requirements, what has to be considered and decided is whether the subject-matter which is protected by the claims, as defined by their categories in combination with their technical features, was extended after amendment or not. In general terms, the question to be considered under Article 123(3) EPC is whether the subject-matter defined by the claims is more or less narrowly defined as a result of the amendment.

4.4 In the present case of the change of category with respect to claim 1 as granted, the protection conferred by the category of claim 1 before amendment must be compared with the protection conferred by the new category introduced by the amendment.

4.4.1 Claim 1 as granted was directed to a network composition defined as comprising the reaction product of three components (i), (ii) and (iii). That type of claim, as set out in G 2/88 (supra, point 2.2) relates to a physical entity and in the case of these claims (supra, point 5, third paragraph), it is generally accepted as a principle underlying the EPC that a patent which claims a physical entity per se, confers absolute protection upon such physical entity: that is, wherever it exists and whatever its context and therefore for all uses of such physical entity, whether known or unknown. Among the uses of the network

compositions according to claim 1 as granted, the patent in suit discloses the one in cosmetics or personal care products (paragraph 38).

4.4.2 Claim 1 of auxiliary request 2 is directed to the use of a network composition in cosmetics or personal care products, the network composition defined as comprising the reaction product of three components (i), (ii) and (iii) further characterized by numerical ranges defining the amounts of these components in the composition. With regard to its formulation, claim 1 of auxiliary request 2 defines a particular use of the network composition that concerns cosmetics or personal care applications as defined in the patent in suit. The reference to cosmetics or personal care products in claim 1, even if it can be seen as being broad, is nevertheless not unclear to a skilled reader. These types of applications were already well known in the prior art before the priority date of the patent in suit. The requirements of Article 84 EPC are found to be met in that respect.

4.4.3 Operative claim 1 is according to G 2/88 (supra, point 5, third paragraph) in effect a claim to a physical entity (the network composition) only when it is being used in the course of the particular physical activity (the use), this being an additional technical feature of the claim. The definition of the use, in claim 1 of auxiliary request 2, as one limited to cosmetics or personal care products is as such an underlying technical effect (the application of the products to cosmetics or personal care resulting from the presence of the network compositions defined in operative claim 1) that characterizes the claimed use in the sense meant in points 5.1 and 9 of G 2/88 (supra). In that regard, claim 1 of auxiliary request 2

does not merely pertain to a use to produce any product in the absence of any purpose. The use of claim 1 of auxiliary request 2 is thus not a process claim within the meaning of Article 64(2) EPC. Also, the definition of claim 1 of auxiliary request 2 by reference to cosmetics or personal care products is in itself sufficient to derive that the amount of network composition used must be such that the products must possess properties that make them suitable for cosmetics or personal care applications. In that regard, the presence of a range defining the amounts of network composition is not a requirement for operative claim 1 to meet the requirements of Article 84 EPC.

4.5 With regard to the other amendment performed in claim 1 of auxiliary request 2, that concerning the definition of its amounts in components (i), (ii) and (iii), the amendment corresponds to claim 4 as granted and is a limitation of the claimed subject matter. That amendment was not contested by the appellant.

4.6 The Board concludes from the above that claim 1 of auxiliary request 2 confers a more limited protection than claim 1 as granted which relates to the composition as physical entity per se. The requirements of Article 123(3) EPC are met. Also, for the reasons given above claim 1 of auxiliary request 2 meets the requirements of Article 84 EPC as well.

5. Inventive step

5.1 Inventive step of claim 1 of auxiliary request 2 was contested in view of D8 and D3 as closest prior art documents.

5.2 With regard to the inventive step objection in view of D3, the first question was whether that document could be seen as a reasonable starting point for the assessment of inventive step of claim 1 of auxiliary request 2 which concerns a use for cosmetics or personal care products. D3 concerns polymerizable compositions for dental applications that are not cosmetics or personal care products. D3 does therefore not concern a subject-matter that was conceived for the same purpose or effect as that reflected in the claims of auxiliary request 2, nor does it belong to the field related to the subject-matter claimed. Already for this reason alone D3 cannot be considered as the closest prior art, not being a reasonable starting point for the analysis of inventive step, and cannot lead the skilled person in an obvious way to the claimed invention (Case Law of the Boards of Appeal, 9th Edition, July 2019, I.D.3.2). No further analysis in respect of this document is then needed.

5.3 It was concluded above in sections 3.3-3.9 that claim 1 of auxiliary request 1 pertaining to a network composition comprising the reaction product of monomers (I), (II) and crosslinking agent (III) which amounts are defined by ranges, was inventive in view of D8. Claim 1 of auxiliary request 2 corresponds to claim 1 of auxiliary request 1 however formulated as a use of a network composition for cosmetics or personal care products. The compositions of D8, including the compositions disclosed in examples 7 and 9 of Table 2, which were seen to be the most relevant in D8 and were chosen as starting points for the assessment of inventive step, all relate to compositions that were used in cosmetics products (claim 1, paragraphs 3, 4, 26, Examples 10-12: O/W-type creams, Example 13: Hair

cream).

5.4 In that respect the uses of the compositions prepared in D8 are according to claim 1 of auxiliary request 2. It was argued by both parties at the oral proceedings before the Board that their arguments laid out during discussion of the inventive step assessment of claim 1 of auxiliary request 1 would also apply to claim 1 of auxiliary request 2. Since D8 also concerns the use of compositions for use in cosmetics products, the same reasoning and the same conclusion regarding inventive step as that conducted for claim 1 of auxiliary request 1 equally apply to claim 1 of auxiliary request 2.

5.5 Claim 1 of auxiliary request 2 thus meets the requirements of Article 56 EPC.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the claims of auxiliary request 2 as filed with the reply to the statement setting out the grounds of appeal and after any necessary consequential amendment of the description.

The Registrar: The Chairman:

B. ter Heijden D. Semino

Decision electronically authenticated