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**Datasheet for the decision
of 12 April 2018**

Case Number: T 1969/14 - 3.3.03

Application Number: 09175498.6

Publication Number: 2189497

IPC: C08K5/521, C08L51/04, C08L69/00

Language of the proceedings: EN

Title of invention:
Polymer compositions containing phosphates

Patent Proprietor:
Rohm and Haas Company

Opponent:
ARKEMA FRANCE

Relevant legal provisions:
EPC Art. 123(2), 123(3), 100(b), 84, 54, 56

Keyword:
Amendments - allowable (yes) - broadening of claim (no)
Grounds for opposition - clarity in opposition appeal
proceedings - insufficiency of disclosure (no)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

G 0003/14, T 0656/07, T 0459/09, T 0295/11



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Case Number: T 1969/14 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 12 April 2018

Appellant:

(Opponent)

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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
9 July 2014 concerning maintenance of the
European Patent No. 2189497 in amended form.**

Composition of the Board:

Chairman D. Semino
Members: O. Dury
C. Brandt

Summary of Facts and Submissions

- I. The appeal by the opponent lies from the interlocutory decision of the opposition division concerning maintenance of European patent No. 2 189 497 in amended form according to the main request filed with letter of 14 April 2014 and an amended description.
- II. Claim 1 of the granted patent read as follows:
- "1. A polymer composition comprising
- (i) one or more multistage polymer comprising
- (a) a first stage polymer having Tg of 0°C or lower,
- (b) a subsequent stage polymer having Tg of 20°C or higher,
- (ii) one or more phosphate salt of a multivalent cation, wherein the anion of said phosphate salt of a multivalent cation consists of phosphorous and oxygen atoms, and
- (iii) one or more alkaline phosphate, in the amount of 100 ppm or more, measured as the weight of phosphorous, based on the dry weight of said multistage polymer, wherein the alkaline phosphate is a salt of an alkali metal cation with a phosphate anion consisting of phosphorous and oxygen atoms or a partially neutralized salt of a phosphate acid."
- III. A notice of opposition to the patent was filed requesting revocation of the patent in its entirety.

IV. The main request filed with letter of 14 April 2014 comprised 7 claims, of which claims 1, 4 and 7 read as follows (in claims 1, 4 and 7, additions as compared to original claims 1, 4 and 8, respectively are indicated in **bold**, deletions in ~~strikethrough~~):

"1. A **dry** polymer composition, **containing 1% or less water, by weight based on the total weight of the polymer composition**, comprising

- (i) one or more multistage polymer comprising
 - (a) a first stage polymer having **a Tg as measured by differential scanning calorimetry** of 0°C or lower,
 - (b) a subsequent stage polymer having **a Tg as measured by differential scanning calorimetry** of 20°C or higher,

(ii) one or more phosphate salt of a multivalent cation, **wherein the anion of said phosphate salt of a multivalent cation consists of phosphorous and oxygen atoms**, and

(iii) one or more alkaline phosphate, in the amount of 100 ppm or more, measured as the weight of phosphorous, based on the dry weight of said multistage polymer, **wherein the alkaline phosphate is a salt of an alkali metal cation with a phosphate anion consisting of phosphorous and oxygen atoms or a partially neutralized salt of a phosphate acid.**"

"4. The polymer composition of claim 1, wherein said ~~polymer composition contains little or no phosphorous compound that is not an orthophosphate salt~~ **the amount of phosphorous compound that is not an orthophosphate salt in said polymer composition either is none or is**

1% or less by weight, based on the weight of said polymer composition."

"7. A process for making a polymer composition comprising

(I) providing a multistage polymer latex, wherein said multistage polymer comprises

(a) a first stage polymer having **a Tg as measured by differential scanning calorimetry** of 0°C or lower,

(b) a subsequent stage polymer having **a Tg as measured by differential scanning calorimetry** of 20°C or higher,

(II) coagulating said multistage polymer latex by mixing said multistage polymer latex with one or more salt of a multivalent cation, **wherein the amount of said salt of a multivalent cation that can be dissolved in water at 20°C is 5g or more per 100 ml of water,**

(III) ~~optionally,~~ after said step (II), washing said multistage polymer with water,

(IV) after said step (III), mixing said multistage polymer with an aqueous solution of an alkaline phosphate,

(V) after said step (IV), drying said multistage polymer to a water content of less than 1% by weight of water based on the dry weight of said multistage polymer,

wherein, after said step (V), said dried multistage polymer comprises 100 ppm or more, based on the dry weight of said multistage polymer, of phosphorous that

is in the form of an alkaline phosphate, **wherein the alkaline phosphate is a salt of an alkaline metal cation with a phosphate anion consisting of phosphorous and oxygen atoms or a partially neutralized salt of a phosphate acid.**

Claims 2 and 3 were dependent on claim 1. Claim 5 was directed to a mixture comprising the polymer composition of claim 1 and one or more matrix resin. Claim 6 was dependent on claim 5.

V. In that decision the following documents were *inter alia* cited:

D1: US 4 897 462

D2: US 5 290 867

D7: JP-A1-2006 249 198

D7c: English translation of D7

D19: JP-A1-2005-248 096

D19b: English translation of D19

VI. In the contested decision, the opposition division held *inter alia* that the main request filed with letter of 14 April 2014, in particular claims 1 and 4 thereof, satisfied the requirements of Article 123(2) and (3) EPC (see sections 3.1, 3.2 and 4).

It was further decided that the patent in suit satisfied the requirements of sufficiency of disclosure (section 5).

Also, claim 1 fulfilled the requirements of clarity (section 6).

Documents D19/D19b, which had been filed late were admitted into the proceedings (section 10.3) and

novelty over D1, D2, D7c and D19b was held to be given (sections 7.1 to 7.4).

Regarding inventive step, D19/D19b was the closest prior art and the subject-matter of claims 1 to 7 of the operative main request differed therefrom in that the dry polymer composition comprised at least 100 ppm of an alkaline phosphate. The objective technical problem resided in the provision of polymer compositions obtained by coagulation with a multivalent cation having improved yellowing and heat ageing resistance which were comparable to those of spray-dried compositions. Considering that none of the documents cited recognised that the presence of at least 100 ppm of an alkaline phosphate in a dried polymer latex coagulated with a multivalent cation improved its yellowing and heat ageing resistance and that D19/D19b taught even away therefrom, the subject-matter of operative claims 1 to 7 was acknowledged to involve an inventive step (section 8; see in particular page 15: first and third full paragraphs).

VII. The opponent (appellant) lodged an appeal against the above decision and requested that the decision of the opposition division be set aside and the patent be revoked. Together with the statement of grounds of appeal the following documents were filed:

D23: Experimental report regarding the drying of a polymer composition according to the patent in suit

D24: Experimental report regarding example 1 of D1

D25: Experimental report regarding example 1 of the patent in suit

- VIII. In the reply to the statement of grounds of appeal the patent proprietor (respondent) requested that the appeal be dismissed and that documents D23 to D25 be not admitted into the proceedings.
- IX. In a communication issued by the Board, issues to be discussed at the oral proceedings were specified, whereby it was indicated that it appeared that the appellant's objections pursuant to Article 123(2) and (3) EPC, Article 100(b) EPC, Article 84 EPC would not succeed (sections 5.6, 6.4, 7.3 and 8.5). Regarding novelty, it was in particular indicated that it seemed that it could not be concluded that feature (iii) according to operative claim 1 was directly and unambiguously disclosed in any of D1 (also taking into account D24), D2, D7c or D19b (sections 9.2.4 and 9.3 to 9.5). Concerning inventive step, it would have to be discussed how the problem effectively solved was to be formulated and whether the solution proposed by the main request was obvious starting from D19b as closest prior art (sections 10.5 and 10.6).
- X. With letter of 16 March 2018 the respondent filed auxiliary requests 1 to 4.
- XI. During the oral proceedings, which were held on 12 April 2018 in the presence of both parties, the respondent withdrew its request made in writing that documents D23 to D25 be not admitted into the proceedings.
- XII. The appellant's arguments, as far as relevant to the present decision, were essentially as follows:

Main request

(a) Article 123(2) EPC

Considering that the wording "is made up of" according to the application as filed meant "comprising", the expression "consists of" in features (ii) and (iii) of claim 1 found no valid support in the application as filed. In that respect, the anions specified at page 6, lines 22-30 of the application as filed were only illustrative and not disclosed as a limitation or as preferred embodiments.

The amendments limiting the subject-matter of claim 1 to "dry" compositions constituted an unallowable generalisation, because it corresponded to an embodiment disclosed at a single passage of the application as filed, namely page 15, lines 1-3 and it was not reflected in the examples thereof. The wording of the passage at page 15, lines 1-3 was further directed to "a" polymer composition of the invention, whereby "a" was an indefinite article indicating that said embodiment could not be generalised to every composition of the invention.

The passage at page 17, lines 17-31 of the application as filed did not provide a valid basis for the amendments carried out in claim 4.

(b) Article 123(3) EPC

The introduction of the requirement that the polymer composition was "dry" in claim 1 of the main request constituted an unallowable

generalisation which was against the requirements of Article 123(3) EPC. Besides, the substitution in paragraph 67 of the patent in suit of the term "may be" by "is" was also contrary to Article 123(3) EPC.

(c) Sufficiency of disclosure

As shown in D23, the teaching at paragraph 109 of the patent in suit was insufficient in order to obtain without an excessive effort a dry polymer as defined in claim 1.

Also, the patent in suit did not disclose how to obtain the phosphate salt of the multivalent cation that consisted of phosphorous and oxygen atoms only. In particular, such an anion was not added in the examples of the patent in suit since they were carried out using disodium phosphate (Na_2HPO_4).

It was further not possible to separate and analyse the alkaline phosphate and the multivalent phosphate according to features (ii) and (iii) of operative claim 1.

In addition, it was shown in D25 that example 1 of the patent in suit was not reproducible.

(d) Article 84 EPC

According to decisions T 656/07, T 459/09 and T 295/11 (none of which was published in OJ EPO), an amended granted claim as a whole could be objected to pursuant to Article 84 EPC. Since the examples of the patent in suit were carried out using Na_2HPO_4 , it was not clear how the

phosphate (ii) according to claim 1, wherein the anion consisted of phosphorous and oxygen, was supported by those examples.

(e) Article 54 EPC

The subject-matter of operative claim 1 was not novel over each of D1, D2, D7/D7c and D19/D19b. In particular, it was shown in D24 that feature (iii) of claim 1 was satisfied in example 1 of D1. Regarding D19/D19b, it was derivable from the preparation method of the polymer composition taught therein that some of the ternary sodium phosphate (which is an alkaline phosphate according to feature (iii) of operative claim 1) used would remain not accessible to react with the divalent alkaline-earth metal according to the indication of paragraph 13 of D19b and would, thus, be present in the dried polymer composition.

(f) Article 56 EPC

It was agreed with the opposition division that the subject-matter of operative claim 1 differed from D19/D19b, which constituted the closest prior art, in that the dry polymer composition comprised at least 100 ppm of an alkaline phosphate.

However, since it was derivable from the table of paragraph 134 of the patent in suit that yellowing and heat ageing resistance were correlated one with each other, the objective technical problem identified by the opposition division should be limited as residing in the provision of polymer compositions obtained by the coagulation with a multivalent cation having improved yellowing

comparable to the one of spray-dried compositions (and not having improved yellowing and heat-ageing resistance properties). Considering that D19/D19b also aimed at reducing the yellowing of the resin and that it was taught in paragraph 13 of D19/D19b that that problem was solved by the combination of an alkaline earth metal salt of phosphoric acid with an alkaline metal salt of phosphoric acid, the subject-matter of operative claim 1 was not inventive.

XIII. The respondent's arguments, as far as relevant to the present decision, may be summarised as follows:

Main request

(a) Article 123(2) EPC

As compared to original claim 1, the amendments carried out in features (ii) and (iii) of claim 1 were based on paragraph 23 of the application as filed, whereby the expressions "made up of" and "consists of" were synonyms. It made no doubt that the first sentence of paragraph 23 was directed to the phosphate salt according to feature (ii), whereas the remaining sentences of paragraph 23 were related to the alkaline phosphate salts of component (iii).

The amendments limiting the subject-matter of claim 1 to "dry" compositions was supported by the passage at page 15, lines 1-3 of the application as filed, which applied to any composition according to the invention.

As compared to original claim 4, the amendment

carried out in claim 4 was based on page 7, lines 14-24 of the application as filed.

(b) Article 123(3) EPC

The amendments limiting the subject-matter of granted claim 1 to "dry" compositions unambiguously restricted the scope of protection.

The amendment in paragraph 67 brought the description in line with the operative claims and also consisted in a limitation.

(c) Sufficiency of disclosure

Sufficiency of disclosure was to be assessed taking into account the teaching of the patent in suit and common general knowledge.

It was correct that since the examples of the patent in suit were carried out with Na_2HPO_4 , it was not certain that the compositions prepared therein effectively satisfied feature (ii). However, there was no evidence on file that a phosphate salt according to feature (ii) was not produced in the examples of the patent in suit. In any case, the documents of the prior art cited in the proceedings showed that the skilled person knew how to proceed to provide it. Besides, the experimental procedure used in those examples was applicable to the preparation of the claimed dry polymer compositions using appropriate reagents, whereby the teaching of paragraphs 8 and 58-69 of the patent in suit could be taken into account. Therefore, although the operative claims might not be illustrated by the examples of the patent in suit, there was enough

information therein in order to carry out the invention.

The operation of drying a polymer composition was a routine laboratory measure, which could be performed in various ways as e.g. indicated in paragraph 66 of the patent in suit. It was not shown that it would not be possible to dry polymer compositions as defined in operative claim 1 by using any of those methods. Also, regarding D23, should the skilled person not achieve an amount of water of 1 wt.% or less as defined in claim 1, it would be possible to modify the method e.g. by waiting longer, adding vacuum or reducing the sample height to achieve the required dryness.

(d) Article 84 EPC

The decisions relied upon by the appellant were superseded by G 3/14 (OJ EPO 2015, 102). Since in the present case, no lack of clarity was shown to arise from the amendments made, the appellant's objection pursuant to Article 84 EPC should be rejected. Besides, the appellant's objection was not pertinent because Article 84 EPC did not require that the claims be supported by the examples.

(e) Article 54 EPC

None of the documents cited by the appellant disclosed directly and unambiguously a dry polymer composition satisfying feature (iii) according to operative claim 1. In particular, each of those documents comprised a washing step after the coagulation: since the alkaline phosphate defined

in feature (iii) was highly soluble in water, all the excess of alkaline phosphate which was present after coagulation would be washed away and would not be present in the dried composition.

Besides, in the examples of D7/D7c use was made of a large excess of calcium relative to phosphate so that no alkaline phosphate might remain.

Also, since the examples of D19/D19b were carried out using an excess of magnesium relative to phosphate, no alkaline phosphate might remain.

(f) Article 56 EPC

It was agreed with the opposition division's findings regarding the choice of the closest prior art (D19/D19b) and the identification of the distinguishing feature of operative claim 1 (feature (iii)).

It was further agreed with the opposition division's formulation of the objective problem. In that respect, heat-ageing and yellowing were two different properties and the appellant's argument according to which those properties were connected was not supported by any evidence. Although the two properties might be interrelated, they were still distinct and recognised as possible drawbacks by the skilled person working in the field of the patent in suit.

None of the cited documents contained a hint that the problem identified above could be solved by ensuring that at least 100 ppm of alkaline phosphate as defined in feature (iii) of operative

claim 1 be present in the dry polymer composition also defined therein.

Therefore, the subject-matter of operative claim 1 was inventive.

XIV. The appellant requested that the decision under appeal be set aside and that European patent No. 2 189 497 be revoked.

The respondent requested that the appeal be dismissed (main request), or, alternatively, that the patent be maintained in amended form in accordance with any of auxiliary requests 1 to 4 filed with letter dated 16 March 2018.

Reasons for the Decision

Main request

1. Article 123(2) EPC

1.1 The opposition division's decision according to which the requirements of Article 123(2) EPC were satisfied is contested by the appellant in respect of claims 1 and 4.

1.2 Claim 1 differs from claim 1 as originally filed in that:

(a) the polymer composition is stated to be dry and to contain 1 % or less of water, by weight based on the total weight of the polymer composition;

- (b) the measuring method of the Tg characterising the multistage polymer (component (i)) is specified;
- (c) the anion of the phosphate salt of the multivalent cation (component (ii)) is defined more specifically and is limited so as to "consist of" phosphorous and oxygen atoms;
- (d) the alkaline phosphate (component (iii)) is defined more specifically and is limited to alkaline metal cations and phosphate anions "consisting of" phosphorous and oxygen atoms or being a partially neutralised salt of a phosphate acid.

1.3 The appellant's objections in respect of claim 1 are directed to above amendments (a), (c) and (d).

1.3.1 Regarding amendment (a): it is concurred with the opposition division's finding according to which that amendment is derivable from the passages at page 15, lines 1-3 of the application as filed: since that passage is disclosed in a general manner, it applies to any embodiment of the application as filed, in particular those according to original claim 1. In that respect, it makes no doubt that the passage at page 15, lines 1-3 of the application as filed is directed to "any" polymer according to the invention. The fact that in that sentence the antecedent "a" is used for the polymer is not held to make any difference as compared to other passages of the application as filed in which the antecedent "the" is used for the polymer (e.g. page 16: lines 23 and 27-32; page 17, lines 1, 3, 17, 23 and 32-33), in particular because the sentence at page 15, lines 1-3 is unambiguously directed to polymers "according to the present invention".

In view of the above, the question whether or not examples 1 to 6 of the patent in suit are directed to a dry polymer composition or not, is not relevant for the present issue.

1.3.2 Regarding amendment (c): it is agreed with the opposition division's view according to which the amendment is directly and unambiguously derivable from the passage at page 6, lines 22-25 of the application as filed. Said passage provides a definition of the term "phosphate" for the whole application, which applies in particular to claim 1 thereof. No argument was further provided by the appellant to refute the opposition division's finding according to which it was derivable from the application as filed that the term "is made up of" meant "consists of", in particular in view of the sentence at page 6, lines 28-30 (distinction with components further comprising hydrogen). Besides, in the Board's view, the term "is made up of" would generally be understood by the skilled person as meaning "consists of".

1.3.3 Regarding amendment (d): for the same reasons as for amendment (c), amendment (d) is directly and unambiguously derivable from the passages at page 6, lines 25-26 and 22-23 of the application as filed. Although the term "phosphate" is indicated in the first sentence of the passage at page 6, lines 22-25 as being limited to anions consisting of phosphorous and oxygen, that definition is unambiguously expanded for "alkaline phosphate" in the sentence at page 6, lines 28-30. It makes no doubt that the skilled person would unambiguously understand that the term "phosphate" and "alkaline phosphate" are defined differently in the application as filed, namely in accordance with

features (ii) and (iii), respectively, of claim 1 of the operative main request.

- 1.4 Claim 4 differs from claim 4 of the application as filed in that the expression "wherein said polymer composition contains little or no phosphorous compound that is not an orthophosphate salt" was replaced by "wherein the amount of phosphorous compound ... either is none or is 1% or less by weight ... composition".

Said amendment is based on page 7, lines 18-24 of the application as filed. Considering that the latter passage is disclosed in a general manner, it would be read as applying to any embodiment of the application as filed, in particular to original claim 4.

- 1.5 In view of the above, there is no reason for the Board to deviate from the opposition division's conclusion according to which the main request satisfies the requirements of Article 123(2) EPC.

2. Article 123(3) EPC

- 2.1 Article 123(3) EPC precludes amending the claims during opposition proceedings in such a way as to extend the protection conferred by the patent as granted. Therefore, in order to decide whether or not an amendment of the patent in suit satisfies the requirements of Article 123(3) EPC it is necessary to compare the protection conferred by the granted claims with that of the operative claims after amendment.

- 2.2 It was not shown by the appellant, in particular during the oral proceedings before the Board, that there existed at least a composition according to operative claim 1 which would not be encompassed by granted

claim 1.

- 2.3 The appellant's objection is directed to the amendment made in claim 1 and in paragraph 67 of the patent in suit defining that the polymer composition is dry, i.e. it contains "1% or less water, by weight based on the total weight of the polymer composition", which was not indicated in granted claim 1 and was only optional in paragraph 67 of the patent in suit.

However, said amendment effectively limits the scope of protection of granted claim 1 by limiting the subject-matter being claimed to those compositions containing 1 wt.% water or less. Same is valid for the amendment made in paragraph 67 of the description (substitution of "may be" by "is").

- 2.4 In view of the above, the appellant's objection is rejected.

3. Article 100(b) EPC

- 3.1 The opposition division's conclusion according to which the requirements of sufficiency of disclosure were fulfilled is contested by the appellant.

- 3.2 In order to meet the requirement of sufficiency, an invention has to be disclosed in a manner sufficiently clear and complete for it to be carried out by the skilled person in the whole area claimed without undue burden, on the basis of the information provided in the patent specification and, if necessary, using common general knowledge. This means in the present case that the skilled person should in particular be capable to prepare a dry polymer composition according to independent claim 1 and to carry out a process

according to independent claim 7.

- 3.3 The appellant argued that D23 showed that it was not possible to dry a polymer composition as defined in claim 1 to a water content of 1 wt.% or less based on the teaching of the patent in suit, in particular paragraph 116 thereof.

However, as indicated in section 3.2 above, sufficiency of disclosure is not assessed on the teaching of the patent in suit only but also taking account of common general knowledge. In that respect, drying a polymer composition is a routine laboratory measure, as argued by the respondent, which can be performed in various ways as e.g. indicated in paragraph 66 of the patent in suit. Regarding the drying experiment carried out in D23 on a composition prepared according to the teaching of the patent in suit, should the skilled person not achieve an amount of water of 1 wt.% or less as defined in claim 1, it makes no doubt that it would be possible to modify the method according to usual laboratory measures e.g. by waiting longer, adding vacuum or reducing the sample height to achieve the required dryness, as argued by the respondent. Under those circumstances, it was not shown that it would not be possible to dry polymer compositions as defined in operative claim 1 by using any of the methods known in the art, particular those specified in paragraph 66 of the patent in suit.

- 3.4 The appellant argued that the patent in suit did not disclose how to obtain the phosphate salt of the multivalent cation that consists of phosphorous and oxygen atoms only (feature (ii) of operative claim 1), whereby the appellant's objection was primarily based on the conclusion that the examples of the patent in

suit did not lead to the formation of such a phosphate salt because they were carried out using a solution of Na_2HPO_4 .

3.4.1 In that respect, contrary to the line of defence apparently adopted during the opposition proceedings and to the indications provided in the patent in suit (paragraphs 131-133 and Table of paragraph 134), the respondent acknowledged, in particular during the oral proceedings before the Board, that examples 1-3 of the patent in suit did not mandatorily illustrate the subject-matter of operative claim 1 because it could not be ascertained that they satisfied feature (ii). Under those circumstances, the examples of the patent in suit on their own are not sufficient to demonstrate that the patent in suit provides enough information to carry out the invention.

3.4.2 However, the respondent argued that the experimental procedure used in those examples was applicable to the preparation of the claimed dry polymer compositions using appropriate reagents and the appellant has not provided any evidence to refute that argument.

Besides, as indicated in section 5.2 of the contested decision, the skilled person is further provided with information how to prepare compositions comprising component (ii) as now claimed in paragraphs 8 and 58-69 of the patent in suit, in particular by using a sufficient excess of alkaline phosphate as indicated in paragraph 68. Also, there is no evidence on file that it is not possible to prepare a composition or to carry out a process as now claimed on the basis of that information.

- 3.4.3 In the Board's view, the question whether or not the skilled person may determine the amount of alkaline phosphate effectively present in the dry composition being claimed is not an issue of sufficiency of disclosure (as apparently considered by the opposition division in section 5.2 of the decision and by the appellant) but rather a question of clarity or of infringement (does a given composition fall under the scope of the operative claims or not?). Therefore, that argument of the appellant is not persuasive.
- 3.4.4 Considering that the respondent accepted in appeal that examples 1-3 of the patent in suit were not mandatorily according to the operative set of claims, the question of the reproducibility of those specific examples as based e.g. on D25 cannot support a lack of sufficiency of disclosure in the absence of evidence that it is not possible to carry out the invention on the basis of the information in the patent and the common general knowledge.
- 3.5 In view of the above, there is no reason to overturn the opposition division's decision in respect of sufficiency of disclosure.
4. Article 84 EPC
- 4.1 According to decision G 3/14, the claims of the amended patent may be examined for compliance with the requirements of Article 84 EPC only when, and then only to the extent that the amendment introduces non-compliance with Article 84 EPC.
- 4.2 The appellant's objection is related to the question if the claims of the main request are supported by the examples, in particular in respect of the definitions

of the phosphate mentioned in the claims. Considering that those definitions correspond to features (ii) and (iii) of the operative claims, which are identical to features (ii) and (iii) of granted claim 1, the appellant's objection is not directed to an amendment made to the granted claims. Therefore, the claims of the main request cannot be examined pursuant to Article 84 EPC in that respect.

4.3 Since the decisions cited by the appellant in support of its objection that an operative claim as a whole might be objected pursuant to Article 84 EPC are all anterior to G 3/14 (in particular, decisions T 656/07 and T 459/09 were explicitly addressed in G 3/14), they were superseded by G 3/14, i.e. in as far as the conclusions reached therein might have deviated from the findings of G 3/14, those conclusions may not be adhered to any more. Therefore, the appellant's argument based on those decisions are not pertinent.

4.4 Since, the appellant did not show that any lack of clarity arose out of amendments made to the granted claims, there is no reason for the Board to deviate from the opposition division's conclusion according to which the requirements of Article 84 EPC were satisfied.

5. Article 54 EPC

5.1 Novelty objections were raised by the appellant in respect of operative product claims 1 to 6 in view of each of D1, D2, D7/D7c and D19/D19b, whereby a point of dispute between the parties was whether or not feature (iii) of operative claim 1 was directly and unambiguously disclosed in those prior art documents. Therefore, the analysis hereinafter concentrates on

that feature.

5.2 Document D1

5.2.1 It is not disputed that feature (iii) is not explicitly disclosed in D1.

5.2.2 In order to compensate the lack of information regarding the amount of alkaline phosphate specified in feature (iii) the appellant filed D24, which was held to be a rework of example 1 of D1.

According to D24, a latex is first prepared according to column 8, lines 10-46 of D1. Then, a wet cake is recovered following the description of paragraph 108 of the A1 publication corresponding to the patent in suit (i.e. paragraph 115 of the patent in suit) and the amount of phosphorous was determined under three different conditions. However, considering that said procedure does not make part of D1, it has to be concluded that said part of D24 may not show that feature (iii) is implicitly disclosed in D1.

Also, it is indicated in D24 that the phosphorous amount was further determined on the dry powder obtained using the conditions described at column 7, lines 36-40 of D1. However, no disclosure in that sense is given in example 1 of D1.

Finally, the sole disclosure of a dry polymer composition given in example 1 of D1 is at column 9, line 4, whereby the drying step only takes place after a dewatering step and on the coagulated polymer. However, it does not appear that D24 is directed to such a composition, in particular because there is no disclosure if and how a coagulation step was carried

out therein (column 8, lines 10-46 of D1, as cited in D24, only discloses the preparation of the latex; coagulation is disclosed at page 8, line 47 to page 9, line 2 of D1).

In view of the above, D24 does not constitute a fair rework of example 1 of D1. Therefore, D24 is of no help to refute the opposition division's finding according to which it was to be expected that the dewatering step would lead to levels of (water soluble) sodium pyrophosphate below 100 ppm (bottom of page 11 of the contested decision).

5.2.3 Under those circumstances, it cannot be concluded that feature (iii) is at least implicitly directly and unambiguously disclosed in example 1 of D1.

5.3 Document D2

Even if, to the appellant's benefit, it were to be considered that the pyrophosphate disclosed e.g. at column 6, line 54 or at column 7, line 50 may react with the multivalent cation of the coagulating agent or of the iron (II) component (D2: claims 4-8; column 3, lines 13-22 and 29-30; column 8, line 25; column 9, line 28-29) in order to form component (ii) according to operative claim 1, there is no evidence on file that feature (iii) of operative claim 1 is mandatorily satisfied. Further considering that D2 teaches a washing step after the coagulation was carried out (column 3, lines 55-57; column 8, lines 35-37; column 9, lines 38-40), it cannot be held, for the same reasons as for D1, that the dried compositions prepared in D2 mandatorily contain 100 ppm of an alkaline phosphate according to feature (iii) of claim 1.

5.4 Document D7/D7c

Also, the same conclusion as above is reached in respect of document D7/D7c. Even if it were to be considered that the teaching of D7c is that calcium phosphate is produced during the coagulation stage (paragraphs 7 and 9, second paragraph; examples 1-4 and comparative examples 1-2; paragraph 55, second paragraph), which corresponds to component (ii) according to operative claim 1, there is no evidence on file that feature (iii) of operative claim 1 is mandatorily satisfied, in particular following the washing stage carried out in the examples (paragraph 50, second paragraph).

5.5 Document D19/D19b

The same conclusion as above is drawn in respect of D19/D19b. Even if it were to be considered that the teaching of D19b is that a divalent alkaline-earth metal phosphate is produced during the coagulation stage (paragraph 13, first sentence of the second paragraph), which corresponds to component (ii) according to operative claim 1, there is no evidence on file that feature (iii) of operative claim 1 is mandatorily satisfied, in particular following the washing stage carried out in the examples (see e.g. page 8, example 1: last sentence of the second paragraph).

In addition, it is noted that the appellant argued that in view of the preparation method of the polymer composition taught in D19/D19b, some of the ternary sodium phosphate (which is an alkaline phosphate according to feature (iii) of operative claim 1) used would remain not accessible to react with the divalent

alkaline-earth metal according to the indication of paragraph 13 of D19b and would, thus, be present in the dried polymer composition. However, also in that respect, no evidence was provided in order to show that that preparation method would effectively result in an amount of at least 100 ppm of the alkaline phosphate in the dried polymer composition, in particular in any of the examples of D19/D19b in which specific preparation methods are described.

Also, since the examples of D19/D19b were carried out using an excess of magnesium relative to phosphate, it is questionable if any alkaline phosphate may remain, as argued by the respondent.

For those reasons, it cannot be concluded that D19/D19b directly and unambiguously discloses a dry polymer composition satisfying feature (iii) according to operative claim 1.

5.6 In view of the above, there is no reason to deviate from the opposition division's decision according to which none of D1, D2, D7/D7c and D19/D19b anticipated the subject-matter of operative claim 1. The same is valid for each of claims 2 to 4, which all depend on claim 1, and for claims 5 and 6, in view of their reference to claim 1.

6. Article 56 EPC

6.1 Although it was stated in section 9.1 of the statement of grounds of appeal that none of the claims of the operative main request satisfied the requirements of Article 56 EPC, a substantiated objection was only put forward against the product claims 1-6 (see sections 9.2 and 11.2). The subject-matter of

operative claim 7 (process) was not objected to by the appellant.

6.2 Regarding operative claim 1, both parties agreed with the opposition division's findings regarding i) the choice of D19/D19b as the closest prior art and ii) the identification of the distinguishing feature of operative claim 1 over D19/D19b (feature (iii)). However, whereas the respondent agreed with the opposition division that the objective technical problem, i.e. the technical problem effectively solved over D19/D19b, resided in the provision of polymer compositions obtained by coagulation with a multivalent cation having improved yellowing and heat-ageing resistance which are comparable to those of spray-dried compositions, the appellant considered that the objective problem only resided in the provision of such polymer compositions having improved yellowing resistance properties (i.e. without the heat-ageing improvement).

6.3 The Board assumes, to the appellant's benefit, that the objective problem resides in the provision of polymer compositions obtained by coagulation with a multivalent cation having improved yellowing resistance properties. As under this assumption, it comes to the conclusion that the subject-matter of claims 1 to 6 is not rendered obvious by the available prior art (see section 6.4 below), it is not necessary for the Board to decide whether a further improvement (in heat-ageing resistance) is to be included in the formulation of the problem, as submitted by the respondent.

6.4 In that respect, as was indicated in the novelty analysis in respect of D19/D19b above, it cannot be concluded that it is directly and unambiguously

disclosed in D19/D19b that the dried polymer compositions prepared therein contain at least 100 ppm of an alkaline phosphate according to feature (iii) of operative claim 1. Nor was it shown by the appellant that such compositions could effectively be obtained following the teaching of D19/D19b. As a consequence, since it cannot be ascertained that D19/D19b effectively discloses dry multistage polymer compositions comprising at least 100 ppm of an alkaline phosphate according to feature (iii), that document cannot be held to contain any hint that the yellowing resistance properties of the dried polymer compositions prepared therein may be improved when they contain at least 100 ppm of an alkaline phosphate according to feature (iii) of claim 1.

Since none of the other documents cited in the proceedings was shown to disclose directly and unambiguously dried polymer compositions comprising at least 100 ppm of an alkaline phosphate according to feature (iii) of operative claim 1 and therefore could not include a hint that this feature may be of relevance for the yellowing resistance properties, the same conclusion as for D19/D19b alone must be reached regarding the combination of any of those documents with D19/D19b.

Therefore, under the previous assumption regarding the formulation of the objective problem (see point 6.3 above), the subject-matter of operative claim 1 is not rendered obvious in the light of the teaching of the prior art. This would be all the more the case if a further improvement were included in the formulation of the technical problem.

- 6.5 For those reasons, the appellant's arguments provide no reason for the Board to overturn the opposition division's conclusion according to which the subject-matter of claim 1 is inventive over D19/D19b as closest prior art, which decision therefore holds good. The same is valid for each of claims 2 to 4, which all depend on claim 1, and for claims 5 and 6, in view of their reference to claim 1.
7. The respondent's main request being allowable, it is not required to deal with auxiliary requests 1 to 4 filed with letter of 16 March 2018.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



B. ter Heijden

D. Semino

Decision electronically authenticated