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

Case Number: T 1120/19 - 3.3.06

Application Number: 11758382.3

Publication Number: 2609250

IPC: D21H21/36, D21H17/28, D21H17/37

Language of the proceedings: EN

Title of invention:

METHOD FOR INCREASING THE ADVANTAGES OF STARCH IN PULPED
CELLULOSIC MATERIAL IN THE PRODUCTION OF PAPER AND PAPERBOARD

Patent Proprietor:

Solenis Technologies Cayman, L.P.

Opponent:

Kemira OYJ

Headword:

Solenis/Paper with starch

Relevant legal provisions:

RPBA 2020 Art. 12(3)
RPBA Art. 12(4)
EPC Art. 56, 123(2)

Keyword:

Inventive step - main request (no) - auxiliary request (yes)
Amendments - intermediate generalisation - unambiguously
derivable (no)
Auxiliary request substantiated (yes)
Late-filed request - request could have been filed in first
instance proceedings (no) - admitted (yes)

Decisions cited:

G 0007/93, G 0003/89, G 0002/10, G 0001/15

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1120/19 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 17 November 2022

Appellant: Solenis Technologies Cayman, L.P.
(Patent Proprietor) Mühlentalstrasse 38
8200 Schaffhausen (CH)

Representative: LKGLOBAL
Lorenz & Kopf PartG mbB Patentanwälte
Brienner Straße 11
80333 München (DE)

Appellant: Kemira OYJ
(Opponent) Porkkalankatu 3
00180 Helsinki (FI)

Representative: Lang, Johannes
Bardehle Pagenberg Partnerschaft mbB
Patentanwälte, Rechtsanwälte
Postfach 86 06 20
81633 München (DE)

Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
4 February 2019 concerning maintenance of the
European Patent No. 2609250 in amended form.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: S. Arrojo
J. Hoppe

Summary of Facts and Submissions

- I. The appeals, filed by both the patent proprietor and the opponent, contest **the decision of the opposition division to maintain European patent No. 2 609 250 in amended form on the basis of the claims of auxiliary request 3 as filed on 12 November 2018.**
- II. With its grounds of appeal filed on 14 June 2019, the proprietor requested to maintain the patent as granted or, as an auxiliary measure, in amended form based on the claims of the first or second auxiliary request. Subsidiarily it requested to remit the case to the first instance to discuss the patentability of the claimed subject-matter and not to admit documents D20 to D26 into the appeal proceedings.
- III. With its grounds of appeal, the opponent filed document D27 (WO 2005/023885 A1) and argued that the claims as maintained by the opposition division did not involve an inventive step in view of D5 (EP 0 752 496 A2) or D6 (WO 95/33097) or of D25/D25a (JP 2010-100945/EN Machine Translation) combined with D5, D6 or the newly filed D27.
- IV. In its reply dated 31 October 2019, the proprietor additionally requested to maintain the patent on the basis of the claims upheld by the opposition division (from now on the 3rd auxiliary request), or of one of auxiliary requests 4 to 6 filed with this reply. Additionally, it requested not to admit document D27.
- V. Claim 1 as granted (**main request**) reads:
"1. A method for manufacturing paper, paperboard or cardboard comprising the steps of

(a) *pulping a cellulosic material containing a starch;*
(b) *treating the cellulosic material containing the starch with one or more biocides; and*
(h) *adding an ionic polymer and an auxiliary ionic polymer to the cellulosic material; wherein the ionic polymer as well as the auxiliary ionic polymer is cationic;*
wherein the ionic polymer has a higher average molecular weight than the auxiliary ionic polymer;
wherein the relative difference between the ionicity of the auxiliary ionic polymer and the ionicity of the ionic polymer is at least 5 mole.-%; wherein the ionicity is the molar content of ionic monomer units relative to the total amount of monomer units;
wherein the ionic polymer comprises cationic monomer units derived from N,N,N-trialkylammoniumalkyl (meth)acrylate, N,N,N-trialkylammoniumalkyl (meth)acrylamide or diallyldialkyl ammonium halide; and wherein the auxiliary ionic polymer comprises monomer units derived from N,N,N-trialkylammoniumalkyl (meth)acrylamide or diallyldimethyl ammonium chloride."

Claim 1 of the **1st auxiliary request** corresponds to that of the main request with the following amendments (highlighted by the board): "*... the ionicity of the ionic polymer is at least 30 ~~5~~ mole.-%...*" and "*...wherein the auxiliary ionic polymer has a higher ionicity than the ionic polymer ...*".

Claim 1 of the **2nd auxiliary request** corresponds to that of the main request with the following amendments (highlighted by the board): "*(h) adding ... to the cellulosic material in the thick stock area, where the cellulosic material has a stock consistency of at least 2,0% ...*".

Claim 1 of the **3rd auxiliary request** corresponds to that of the main request with the following amendments (highlighted by the board): *"wherein the auxiliary ionic polymer comprises cationic monomer units derived from N,N,N-trialkylammoniumalkyl (meth)acrylamide ~~or diallyldimethyl ammonium chloride~~"*.

Claim 1 of the **4th and 5th auxiliary request** corresponds to that of the 1st and 2nd auxiliary request, respectively, with the following amendments (highlighted by the board): *"wherein the auxiliary ionic polymer comprises monomer units derived from N,N,N-trialkylammoniumalkyl (meth)acrylamide ~~or diallyldimethyl ammonium chloride~~"*.

Claim 1 of the **6th auxiliary request** corresponds to that of the 4th auxiliary request with the following amendments (highlighted by the board): *"(h) adding ... to the cellulosic material in the thick stock area, where the cellulosic material has a stock consistency of at least 2,0% ..."*.

VI. In its reply, the opponent argued that the main, first and second auxiliary request did not meet the requirements of Articles 123(2) and 83 EPC, and that their subject-matter was neither novel in view of D1 (US 6,033,524), D2 (WO 01/36740 A2), D3 (US 4,894,119) or D4 (US 6,103,065) nor inventive in view of D19 (WO 2008/095764 A1) combined with common general knowledge in the light of D8 (Papermaking Science and Technology, "Papermaking Chemistry", Chapters 5-6, 2007), D25/D25a combined with D6, D6 combined with common general knowledge in the light of D8, D24 (US 6,059,930) combined with common general knowledge in the light of D8 or D23 with common general knowledge or D24 with common general knowledge. Moreover, the opponent argued

that auxiliary requests 1 and 2 did not meet the requirements of Rule 80 EPC and that auxiliary request 2 should not be admitted. The opponent further requested to remit the case to the first instance if the board concluded that the claims as granted met the requirement of Article 123(2) EPC.

- VII. With a letter dated 19 September 2022, the proprietor submitted additional arguments in support of its position that the 4th and 6th auxiliary requests complied with the requirements of Article 56 EPC.
- VIII. With a letter dated 17 October 2022, the opponent filed documents D28 (J. Gess, "*Retention of fines and fillers during papermaking*", 1998) and D29 (G. Smook, "*Handbook for pulp & paper technologists*", 1992) in response to the proprietor's arguments and requested not to admit any new argument, in particular those based on example 11 (table 15) of the opposed patent.
- IX. In response the proprietor requested not to admit documents D28 and D29 and further filed document D30 (WO 2013/124542 A1).
- X. At the oral proceedings, which took place on 17 November 2022, the opponent withdrew its request to remit the case to the first instance.

The appellant/patent proprietor requested that the decision under appeal be set aside and the patent be maintained as granted (main request); or as an auxiliary measure, that the patent be maintained in amended form based on the basis of the first or second auxiliary requests, filed with the grounds of appeal; or as a further auxiliary measure, that the appeal be dismissed (third auxiliary request), or that the patent

be maintained in amended form on the basis of the fourth to sixth auxiliary requests, filed with the reply to the grounds of appeal of the opponent.

The appellant/opponent requested that the decision under appeal be set aside and that the European patent be revoked.

Reasons for the Decision

1. Admittance of late filed documents
 - 1.1 The proprietor argued that even though D25/D25a had been admitted by the opposition division, it had been late filed and should therefore not be admitted into the appeal proceedings. This document had been submitted because, like the invention, it related to the reduction of the Chemical Oxygen Demand (from now on "COD"). This object being however clearly derivable from the patent, D25/D25a should have been filed with the notice of opposition, because its late submission represented an attempt to create a new opposition case at a late stage.
 - 1.2 The board disagrees with these arguments, because it is established case law (see G 7/93, rule 2.6) that the board should only overrule a first instance decision to admit or not a piece of evidence if it can be concluded that the division exercised its discretion without taking the right principles into account or in an arbitrary or unreasonable way (Case Law of the Boards of Appeal, 9th edition, V.A.3.5.1b). This has neither been argued by the proprietor, nor is it evident from the outstanding facts. The proprietor itself has used D25/D25a as the closest prior art, thus implicitly admitting that its content was *prima facie* relevant for

the case. The board sees therefore no reason to overrule the decision of the opposition division to admit this document into the proceedings. It is therefore not necessary to decide, as concluded by some boards (e.g. T 617/16, Reasons 1.1.1; T 1852/11, Reasons 1.3; T 1201/14, Reasons 2; T 2049, reasons 3.2), whether a retroactive exclusion of submissions admitted in the first instance proceedings and decided in the contested decision would not be possible at all.

1.3 Document D25/D25a is therefore part of the proceedings.

1.4 D20-D24 and D26-D30 being not relevant to the underlying decision, there is no need to rule on their admittance.

2. 4th auxiliary request - Inventive Step

Claim 1 of this request is based on a combination of auxiliary requests 1 and 3. Despite these limitations, the requirements of Article 56 EPC are not met for the following reasons:

2.1 Closest prior art

2.1.1 The board agrees with the opposition division and the proprietor in that document D25/D25a represents the closest prior art, because it relates to the same technical field (papermaking processes) and addresses (paras. [0007] and [0028], claims 1 and 2) the same technical problem as the underlying invention, in particular the reduction of the COD value in the waste water of the paper making machine.

To solve the problem of reducing the COD in the waste water, this document proposes (paras. [0029] and

[0030]) adding a biocide to control the microbiological degradation of the starch.

2.1.2 While document D25 also discloses the addition of a cationic polymer (par. [0044]), it fails to disclose the addition of a second polymer, so that the subject-matter of claim 1 differs from this document in that the dual polymer system defined in point (h) of this claim is added to the paper stock.

2.2 Problem solved by the invention

2.2.1 The proprietor argued that the addition of a dual polymer system in accordance with the invention led to a number of technical effects, as demonstrated in particular by examples 1 and 5, which show that the use of this system improved the fixation of the starch to the thick stock with respect to the use of a single polymer (point b) in par. [0357] and table 8), with the effect of further reducing the COD and, as shown in examples 6 to 9, to increase the paper strength. Furthermore, as shown in example 10, the use of the dual polymer system reduced the amount of biocide required to operate under certain threshold conditions.

These technical effects did not only result from an improved retention system in its broadest sense, but from the specific and unexpected effect of the dual polymers on the re-fixation of the starch to the thick pulp. More specifically, as indicated in paras. [0032] and [0033] of the patent, it had been surprisingly discovered that the starch originating from recycled paper (what the patent denominates "non-degraded starch") could be fixated or re-fixated to the fibers by means of the dual polymer system as defined in claim 1. Conventional retention systems were in principle

conceived to promote retention of fibre fines and fillers (as indicated on page 3, lines 31-34 of D6), but not to fixate or re-fixate the starch to the fibers.

The proprietor concluded that, in view of the above cited experiments and in-line with par. [0028] of the patent, the invention solved the problem of providing an improved papermaking process from recycled paper, wherein the COD was reduced and the starch was re-fixated to obtain paper having an improved strength and/or with a reduced biocide consumption.

- 2.2.2 The board disagrees with the formulation of the problem proposed by the proprietor because, as explained in the following paragraphs, the multiple technical effects illustrated in the examples are considered as interrelated consequences resulting from the improvement of the retention system in the papermaking process.
- 2.2.3 The board first notes that the so-called "fixation" or "re-fixation" of the starch is part of the functions of a conventional retention system. As the patent itself indicates (paras. [0328] and [0329]), the skilled person knows that "fixation"/"re-fixation" of starch is achieved by means of retention aids (i.e. a conventional retention system). While it is true that the concept of "retention" is often associated with fiber fines and fillers, this simply reflects the fact that these are the main components of the pulp, not that other additives should not be retained. After all, it is self-evident that any additive having a functional role in the paper product (as is the case with starch) must be retained in the fiber web in order to fulfill its function. It is also not apparent why a

skilled person would be surprised by the fact that an improvement in the retention system would also improve the retention/fixation of starch to the fibers, as there is no reason to conclude that starch should behave differently in this respect from other additives of the pulp. In fact, as indicated in D1 (col. 4, lines 5-9), starch is not only fixated by retention aids, but often acts itself as a retention aid by forming flocs with the mineral fillers.

When these issues were raised at the oral proceedings, the proprietor pointed out that even though the retention of freshly added starch might be improved with conventional retention aids, this was not the case for starch resulting from recycled paper. This type of starch (also called "non-degraded starch"; see par. [0033] of the patent) was generally not fixated by conventional retention systems but tended to remain in the filtrate, thus causing higher COD in the waste water.

The board is however not convinced that the evidence on file demonstrates a technical effect associated with the fixation of a specific type of starch. To begin with, the examples do not provide any specific identification or measurement of different types of starch in the process, so it is not possible to conclude whether the observed reduction in starch of the filtrate (or the increase of the fixation/re-fixation of the starch) concerns a specific type of this substance or not. In any case, claim 1 at issue is not restricted to a specific type of starch or even to a papermaking process with cellulosic pulp derived from recycled paper, but simply defines a "*cellulosic material containing a starch*", which clearly

encompasses processes in which all the starch is freshly added to the pulp.

The board therefore concludes that the skilled person would consider the fixation of starch as part of the normal functions of a conventional retention system.

- 2.2.4 The board can also not follow the proprietor's argument that the observed improvement in paper strength and COD reduction are unexpected effects, i.e. that a skilled person would not expect such results from improving the retention system.

In the board's view, it is self-evident that any improvement of the retention system should give rise to lower COD values, because COD measures the amount of chemically oxidisable matter (i.e. impurities) in the waste water, so better retention would normally imply retaining more impurities in the fiber web, which would obviously reduce the amount of impurities in the waste water and the COD caused by them.

It is also not apparent for the board why the observed improvement in paper strength should not be expected when the retention system is improved. In D25 the addition of biocide leads to higher paper strength and also to higher amounts of starch in the pulp (see table 3). While, as the proprietor argued, this document associates the improvement in paper strength with the presence of the biocide and the reduction of the so-called "slime damage" (i.e. formation of biological deposits from the degraded starch in the paper structure), as the board pointed out, there is no information in the examples of the patent to discard that the observed increase in paper strength is also caused by a reduction of the slime damage.

The reduction of the slime damage is namely not only to be expected from lower micro organism activity caused by the biocide, but also by means of a reduction of the starch availability as a result of an improved retention of starch in the fiber web. Furthermore, as pointed out at the oral proceedings, one of the known functions of starch in the paper web is to act as binder for the fillers (in fact, in col. 4, line 6 of D1, starch is cited as an exemplary filler binder), so a skilled person would not be surprised by the fact that increasing starch retention plays a role in improving paper strength (binders being known to increase paper strength).

The board therefore concludes that a skilled person would associate the improvements in COD and paper strength with an improved starch retention.

- 2.2.5 In view of the above considerations, the board concludes that all the technical effects cited by the proprietor (i.e. improved starch fixation, lower COD values and increased paper strength) represent known sub-effects resulting from an improved retention system.

Consequently, the board concludes that the problem solved by the invention is that of providing a papermaking process for a starch containing cellulosic material having an improved retention.

- 2.3 Obviousness of the solution

- 2.3.1 Document D6 addresses (page 6, lines 3-12) the problem of maintaining or improving the formation and retention in a papermaking process comprising the steps of:

- adding a cationic flocculant preferably including (see page 17, lines 3-21) cationic monomers derived from dialkylaminoethyl(meth)acrylates, dialkylaminomethyl(meth)acrylamides and dialkylamino-1,3-propyl(meth)acrylamides, such as a 90 mole % acrylamide with 10 mole % dimethylaminoethyl acrylate quaternised with methyl chloride ("flocculant E" in example 2 on page 25, lines 22-25). The flocculant includes not more than 20 mole.-%, and frequently not more than 10 mole.-% of cationic monomers; and
- adding a low molecular weight cationic coagulant such as (see page 20, lines 10 to 14) "homopolymers of dialkylaminoalkyl(meth)acrylamide or -acrylate quaternary salt or acid addition salt and copolymers of these with small amounts (generally below 30% and preferably below 10%) acrylamide", wherein (page 20, lines 6-7) at least 70% and generally at least 90% of the monomers of the coagulant are cationic.

2.3.2 The proprietor argued that there was no incentive to consult the content of D6, as this document neither explicitly concerns stocks including starch nor addresses the problem of further reducing the COD or improving the paper strength. Furthermore, even if the teachings of D6 were taken into account, the skilled person would need to make several selections to arrive at the subject-matter of claim 1: a first one of a cationic polymer as ionic polymer (according to pages 16 and 17 the polymer could also be anionic or non-ionic), a second one of a polymeric coagulant as auxiliary ionic polymer (according to page 19, lines 8-10 the coagulant could also be an inorganic material) and a third one of the monomers falling within the scope of claim 1 for the coagulant (list on page 20). Consequently, a skilled person would not consider the

combination of D25 and D6 for solving the underlying technical problem, and even if such combination were considered, it would not arrive at the subject-matter of claim 1 at issue without exercising inventive skills.

2.3.3 The board disagrees with this argumentation for the following reasons:

It is first noted that, as concluded above, the problem solved by the invention is that of providing an improved retention system, which is explicitly (see abstract and page 6, lines 3-12) one of the purposes in document D6. Moreover, D6 also relates to cellulosic materials containing starch because, as is the case in D25, the source of the pulp is said to be recycled paper (see page 5, lines 31-34 and page 15, lines 27-28), which is known to include large starch concentrations. The skilled person would therefore indeed take into account the teachings of D6 for solving the underlying technical problem when starting from D25 as closest prior art.

The board also notes that D6 clearly teaches using a flocculant comprising cationic monomers, since the optional use of anionic monomers is accompanied by an indication that the final polymer should anyway be cationic (see page 16, lines 34-35 and page 17, lines 24-28). Moreover, the most preferred cationic monomers used for preparing the flocculant in D6 (see page 17, lines 8-10) as well as the preferred "flocculant E" used in example 2 (see page 25, lines 22-25) and table 3, all fall within the scope of claim 1 at issue (here it is noted that, according to the patent (par. [0232]) *"the term "(meth)acryl" shall refer to methacryl as well as to acryl"*), so there is no need to make any

selection in D6 to arrive at the flocculant or ionic polymer proposed in claim 1 at issue.

While D6 (page 19, lines 9-10) indicates that the coagulant (i.e. the auxiliary ionic polymer) can be an inorganic material or a second polymeric material, the exemplary embodiment in example 2 as well as the method providing the best combined results in terms of retention and formation (see table 3 and comparison of the results on table 6 and page 27) both include a polymeric flocculant and a polymeric coagulant, so D6 clearly teaches that using a dual polymer system is advantageous for improving retention (and for improving paper quality by means of a better formation).

A skilled person looking for an improved retention system would therefore recognise in D6 that the use of a polymeric flocculant in combination with a polymeric coagulant (i.e. a dual system) leads to better retention when compared to the use of a flocculant alone. This improvement is observed both in the presence and in the absence of bentonite (see table 3), and while the best results are obtained when bentonite is added, this appears to be of no relevance for the underlying discussion because claim 1 at issue does not exclude the addition of bentonite.

The proprietor is right in that only some of the monomers proposed to prepare the coagulant (see page 20) fall within the scope of claim 1 (in particular the homopolymers of dialkylaminoalkyl(meth)acrylamide or -acrylate). There is however no evidence that this selection is associated with any effect or advantage with respect to the other options in D6, so the board considers that the selection of those options falling within the scope of claim 1 would represent an obvious

choice among known alternatives (i.e. all the alternatives are considered to be equally obvious). The board therefore concludes that the proposed solution to the underlying technical problem (i.e. the use of a dual polymer system as proposed in claim 1 to improve retention) is obvious in view of the teachings of D6.

Thus, a skilled person looking for solutions to improve the retention in the papermaking processes of D25 would consider the teaching in document D6, and in doing so would arrive at the subject-matter of claim 1 without exercising inventive skills.

The invention is therefore obvious in view of the combination of D25 and D6, so the requirement of inventive step is not met.

3. Main, 1st and 3rd auxiliary requests - Inventive Step

3.1 Since the subject-matter of claim 1 of these requests is broader than that of the 4th auxiliary request, it follows that the same arguments and conclusions apply to these requests for the question of inventive step.

3.2 The subject-matter of claim 1 of the main, 1st and 3rd auxiliary request is therefore obvious in view of D25 combined with D6, so these requests do not meet the requirements of Article 56 EPC.

4. 2nd and 5th auxiliary requests - Article 123(2) EPC

4.1 Claim 1 of these requests was amended with respect to claim 1 as originally filed *inter alia* by incorporating the following feature from the description:

"... the relative difference between the ionicity of the auxiliary ionic polymer and the ionicity of the ionic polymer is at least 5 mole.-% ..."

- 4.2 The opposition division and the proprietor considered that this amendment was supported by the last paragraph of page 65 of the application as filed, which disclosed different optional values for the ionicity difference (including the alternative "at least 5 mole.-%") and was introduced with the expression "In a preferred embodiment", so the alternatives disclosed therein formally represented an independent embodiment from which the proposed amendment was directly derivable.
- 4.3 The board disagrees with the above conclusions for the following reasons:
- 4.3.1 The two last paragraphs on page 65 of the description as filed are indeed introduced with the expression "In a preferred embodiment" which, as the proprietor argues, represents a formal indication that they constitute distinct embodiments. The first of these paragraphs indicates (penultimate paragraph on page 65) that the ionicity of the auxiliary ionic polymer is higher than that of the ionic polymer. The second one (last paragraph on page 65) discloses a list of alternative values for the relative ionicity differences between the polymers. While there is no explicit indication in these paragraphs that the ionicity differences should be read in combination with the requirement that the ionicity of the auxiliary ionic polymer is higher than that of the ionic polymer, the following explanatory statement in the passage bridging pages 65 and 66 (which is part of the last paragraph on page 65) implicitly indicates that the two allegedly independent preferred embodiments are in fact

linked, and in particular that the ionicity difference values and the higher ionicity of the auxiliary ionic polymer are part of one and the same embodiment: *"For example, when the above difference amounts to at least 40 mole.-% and the ionic polymer has an ionicity of e.g. 30 mole.-%, then the ionicity of the auxiliary ionic polymer is at least 70 mole.-%."*

4.3.2 The proprietor argued that the expression *"For example"* in the above passage implied that the explanation was only a non-limiting and optional illustration, so even though the ionicity of the auxiliary ionic polymer was higher in that particular case, this could not be extrapolated to conclude that this feature was linked to the ionicity difference values in that paragraph. Therefore, omitting that the ionicity of the auxiliary ionic polymer was higher than that of the ionic polymer did not extend the scope of claim 1 beyond the content of the application as filed.

4.3.3 The board disagrees, because the expression *"For example"* is regarded as an indication that the proposed value of 40 mole.-% is one of several optional ionicity differences proposed in that paragraph. Furthermore, this is followed by the explanation that when the ionic polymer has a ionicity of 30 mole.-%, then the ionicity of the auxiliary ionic polymer is 70 mole.-%. It is thus apparent in view of this passage that it is the value of 40 mole.-% which is optional and not the subsequent explanation. In other words, the passage clearly indicates that an ionicity difference of at least X (wherein X is an optional example) implies that when the ionic polymer has an ionicity of Y (again an optional example), then the ionicity of the auxiliary ionic polymer should be (this conclusion not being presented as optional) at least Y + X. This statement

is understood as an indication that the embodiments in the last two paragraphs of page 65 of the application are in fact functionally and/or inextricably linked, which means that the proposed ionicity differences represent the values by which the ionicity of the ionic auxiliary polymer is higher than that of the ionic polymer. This is moreover supported by the examples E₁ to E₆ of table 3, all of which include auxiliary ionic polymers having ionicity values significantly higher than those of the ionic polymer, as well as by original claim 3 in which the difference in ionicity is defined in combination with the indication that the ionicity of the auxiliary ionic polymer is higher than that of the ionic polymer.

Consequently, the board considers that the definition of an ionicity difference of "*at least 5 mole.-%*" in the original application is linked to the indication that the ionicity of the auxiliary ionic polymer is higher than that of the ionic polymer. Amending the claim by defining a specific ionicity difference without indicating that the auxiliary ionic polymer has a higher ionicity therefore represents an unallowable intermediate generalisation.

- 4.3.4 The board also notes that, as discussed at the oral proceedings, the same conclusion would be reached even if it were to be assumed that the formal introduction of the last paragraph on page 65 as "*a preferred embodiment*" provides, as the proprietor argued, a direct support for the contested amendment and that the subsequent example in the passage bridging pages 65 and 66 does not clearly imply that there is a link with the previous paragraph. Even under such assumptions, the example in the passage bridging pages 65 and 66 would still introduce ambiguity into the actual disclosure of

these paragraphs and would leave the reader in doubt as to whether or not there is a connection between the relevant embodiments. The application as filed can therefore not be considered to unambiguously disclose an ionicity difference of *"at least 5 mole.-%"* in isolation from the requirement that the auxiliary ionic polymer has a higher ionicity than the ionic polymer.

To comply with the requirements of Article 123(2) EPC, the subject-matter of the claims should be directly and unambiguously derivable from the information in the application as filed, the so-called "gold" standard (see G 3/89, OJ 1993, 117; G 2/10, OJ 2012, 376; G1/15, OJ 2018,70). In the present case and in view of the above considerations, the proposed amendment is considered to represent an unallowable intermediate generalisation because it is not unambiguously derivable from the content of the application as filed, so at least the second criterion of the "gold" standard is not fulfilled.

- 4.4 In view of the above considerations, the board concludes that the subject-matter of claim 1 of the 2nd and 5th auxiliary requests extends beyond the content of the application as filed, so the requirements of Article 123(2) EPC are not met.
- 5. 6th auxiliary request - Substantiation and admittance
 - 5.1 According to Article 12(3) RPBA 2020, the statement of grounds of appeal and the reply shall contain a party's complete case, including any argument relied on.
 - 5.2 The opponent argued that the 6th auxiliary request had not been substantiated by the proprietor and in particular that no argument had been presented as to

why it overcame the inventive step objections from the opponent. This request could therefore only be considered to have been validly filed after the summons to attend oral proceedings, so the admittance criteria under Article 13(2) RPBA 2020 should be applied.

- 5.3 The board disagrees with the above argumentation because, as indicated at the oral proceedings, under point 7.5 of the proprietor's reply it is briefly reasoned why this request should be considered to be inventive in view of the cited prior art. The request was therefore substantiated with this reply (Article 12(2) RPBA 2007, Article 12(2) Article 2020), so its admittance is governed by Article 12(4) RPBA 2007, according to which the board has the discretion to disregard requests which could and should have been presented in the first instance proceedings.
- 5.4 Since the opposition division concluded that a broader version of claim 1 met the requirements of the EPC, there is no reason to conclude that the proprietor could or should have filed this request in the first instance proceedings. The board has therefore no reason to exercise its discretion not to admit this request into the appeal proceedings.
6. 6th auxiliary request - Inventive step
- 6.1 Claim 1 of this request corresponds to that of the 4th auxiliary request, wherein the ionic polymer and the auxiliary ionic polymer are added to the thick stock area (i.e. the area where the cellulosic material has a stock consistency of at least 2.0%).
- 6.2 Closest prior art and problem solved

- 6.2.1 All parties accepted that D25/D25a should be regarded as the closest prior art, from which claim 1 at issue differs in that:
- i) a dual polymer system as defined in point (h) of claim 1 is added to the stock, and
 - ii) the ionic polymer and the auxiliary ionic polymer are added to the thick stock area.
- 6.2.2 In its preliminary opinion, the board indicated that no argument or evidence had been presented that the additional differentiating feature (feature ii) above) would provide any specific technical effect.
- 6.2.3 The proprietor responded by referring to example 11 of the patent. At the oral proceedings, the opponent requested not to admit this late filed argument under Article 13(2) RPBA 2020. While no decision has been taken in this respect, it will be assumed for the sake of the argument (in the opponent's favour), that the proprietor's argument based on example 11 of the patent is not part of the discussion.
- 6.2.4 Since, in view of the above assumption, there is no further technical effect associated with the addition of the polymers to the thick stock area (i.e. differentiating feature ii)), the invention at issue is considered to solve the same technical problem as in the 4th auxiliary request, namely the provision of a papermaking process for a starch containing cellulosic material with an improved retention.
- 6.3 Non-obviousness of the solution
- 6.3.1 The opponent argued that there were only four alternative ways to add the ionic and the auxiliary ionic polymers (i.e. Thick stock/thick stock, thin

stock/thick stock, thick stock/thin stock and thin stock/thin stock). While document D6 taught to add the ionic polymer or the flocculant to the thick stock area and the auxiliary ionic polymer or the coagulant to the thin stock area, this was done in order to prevent an adverse effect on the brightness of the paper. The contested patent did however not demonstrate that this brightness loss was prevented with the method of the invention, so selecting the order of addition of the polymers was simply a matter of experimenting with any of the other three available alternatives.

6.3.2 The board is not convinced by this argumentation, as D6 clearly teaches away from the proposed solution. First, it is noted that none of the processes leading to a loss of brightness in D6 (see table 1) corresponds to a method according to the invention, so the teachings in D6 do not provide any evidence that the method according to the invention would lead to a loss of brightness or to any other disadvantage.

6.3.3 Document D6 however provides teachings to consider a dual polymer as proposed in the invention and to add the auxiliary ionic polymer or coagulant to the thin stock area. While it is not contested that a skilled person could arrive at the method defined in claim 1 at issue by conducting relatively simple experiments, the board does not see any incentive to do so, as D6 clearly teaches that it is advantageous to add the flocculant to the thick stock area and to the bentonite and/or the coagulant to the thin stock area. It is therefore concluded that a skilled person would not contemplate the alternative of adding both polymers to the thick stock area as defined in claim 1 at issue.

The invention defined in claim 1 is thus not obvious in view of D25 combined with D6.

The board has reached this conclusion without taking into account the proprietor's further arguments in letter dated 19 September 2019 based on example 11 of the patent. Thus, there was no need to decide whether or not these arguments should be admitted, as requested by the opponent.

6.4 The opponent confirmed at the oral proceedings that the only objection against the 6th auxiliary request under Article 56 EPC was the one based on the combination of D25 and D6. Thus, the subject-matter of claim 1 is considered to meet the requirements of Article 56 EPC.

6.5 Dependent claims 2 to 13 refer back to claim 1, so their subject-matter also meet the requirements of Article 56 EPC.

7. 6th auxiliary request - Further requirements

7.1 The opponent did not raise any objections under Articles 83 and 84 EPC. The board sees also no reason to raise any objection of its own motion in this respect.

7.2 The subject-matter of claim 1 at issue is supported by the content of the application as filed. In particular, claim 1 is based on claims 1, 2 and 3 as filed combined with page 3, last paragraph (adding both polymers in the thick stock area).

7.2.1 Dependent claim 2 is based on the third paragraph of page 40 as filed; dependent claim 3 is based on the

fourth paragraph of page 59; and dependent claims 4 to 13 are based on claims 4, 11 to 20 and 25 as filed.

7.2.2 The subject-matter of claim 1 at issue is also narrower than that of the claims as granted, so the scope of protection has not been extended. The board therefore concludes that the requirements of Article 123(2) and (3) EPC are also met.

8. The claims according to the 6th auxiliary request therefore comply with the requirements of the 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 in amended form based on the claims of the sixth auxiliary request filed on 31 October 2019, and a description to be adapted where appropriate.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated