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**Datasheet for the decision
of 5 February 2013**

Case Number: T 0689/11 - 3.3.03

Application Number: 01271395.4

Publication Number: 1359163

IPC: C08C 1/15, C08F 6/22

Language of the proceedings: EN

Title of invention:

Method for producing carboxyl group containing rubber

Applicant:

DENKI KAGAKU KOGYO KABUSHIKI KAISHA

Headword:

-

Relevant legal provisions:

EPC Art. 84
RPBA Art. 13

Keyword:

"Admissibility of late filed request: no (main request)"
"Clarity: no (auxiliary requests 1-2)"

Decisions cited:

T 0700/05

Catchword:

-



Case Number: T 0689/11 - 3.3.03

DECISION
of the Technical Board of Appeal 3.3.03
of 5 February 2013

Appellant:
(Applicant)

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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted 12 November 2010
refusing European patent application
No. 01271395.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: B. ter Laan
Members: O. Dury
R. Cramer

Summary of Facts and Submissions

I. The appeal by the applicant lies against the decision of the examining division posted 12 November 2010 to refuse European patent application N°. 01 271 395.4 corresponding to the international application filed as PCT/JP01/11283 and published as WO 02/50126 (D0, in Japanese language).

II. The application as filed was based on 8 claims of which claims 1, 4, 5 and 6 read:

"1. A method for producing a carboxyl group-containing rubber wherein a dry rubber is produced from a polyvinyl alcohol-containing latex of a carboxyl group-containing rubber by continuously carrying out coagulation, dewatering, washing and drying in a dewatering/drying apparatus of a screw extruder type, characterized in that a coagulating agent containing ammonium borate is used."

"4. The method for producing a carboxyl group-containing rubber according to any one of Claims 1 to 3, wherein the coagulating agent is a coagulating agent containing ammonium borate and ammonium sulfate together."

"5. The method for producing a carboxyl group-containing rubber according to any one of Claims 1 to 4, wherein a gelling agent for the polyvinyl alcohol is mixed to the coagulating agent."

"6. The method for producing a carboxyl group-containing rubber according to any one of Claims 1 to 5,

wherein the amount of the coagulating agent is from 0.2 to 15 parts by mass per 100 parts by mass of the polymer constituting the rubber."

Claims 2, 3 and 7 were dependent claims directed to embodiments of claim 1. Claim 8 dealt with a carboxyl group-containing rubber produced by the method as defined in any of claims 1-7.

III. During the examination procedure the following documents were, *inter alia*, either cited in the contested decision (D3/D3a) or in the international search report (D2):

D2: JP-A-60 36502

D3: JP-A-2001 131 224

D3a: English translation of D3

IV. The decision under appeal was based on a main request and two auxiliary requests. The examining division held that none of those requests was novel over D3/D3a. In addition, considering that the same compounds could be used under the different names of "gelling agent" and "coagulating agent" mentioned in claim 1 of auxiliary request 2, it was concluded that the subject-matter thus claimed was not clear in the sense of Art. 84 EPC.

V. On 11 January 2011, the applicant (appellant) lodged an appeal against the above decision and simultaneously paid the prescribed fee. The statement of grounds of appeal was filed on 7 March 2011.

With letter of 4 January 2013 the appellant submitted an English translation of D2 (D2a) and filed a main

request as well as two auxiliary requests in replacement of all former requests.

Claims 1 and 4 of the main request read as follows (additions are indicated in **bold** and deletions as ~~striketrough~~, both as compared to claims 1 and 4, respectively, of the application as filed):

"1. A ~~method~~ **process** for producing a **scorch resistant** carboxyl group-containing rubber wherein a dry rubber is produced from a polyvinyl alcohol-containing latex of a carboxyl group-containing rubber by continuously carrying out coagulation, dewatering, washing and drying in a dewatering/drying apparatus of a screw extruder type, characterized in that ~~a coagulating agent containing ammonium borate is used~~

- **coagulation is carried out with a coagulating agent containing ammonium borate, wherein the amount of the coagulating agent is from 0.2 to 15 parts by mass per 100 parts by mass of the polymer constituting the rubber, and in that**
- **a gelling agent for the polyvinyl alcohol is mixed to the coagulating agent."**

"4. The ~~method for producing a carboxyl group-containing rubber~~ **process** according to any one of Claims 1 to 3, wherein the coagulating agent is a coagulating agent containing ammonium borate and ammonium sulfate together."

Claim 1 of auxiliary request 1 read as follows:

"1. A ~~method~~ **process** for producing a **scorch resistant** carboxyl group-containing rubber wherein a dry rubber

is produced from a polyvinyl alcohol-containing latex of a carboxyl group-containing rubber by continuously carrying out coagulation, dewatering, washing and drying in a dewatering/drying apparatus of a screw extruder type, characterized in that

- a coagulating agent containing ammonium borate is used **in an amount of from 0.2 to 15 parts by mass per 100 parts by mass of the polymer constituting the rubber, and in that**
- **in addition to the coagulating agent, a gelling agent for the polyvinyl alcohol is mixed to the coagulating agent, wherein the gelling agent is a compound containing a sulfate group."**

Claim 1 of auxiliary request 2 read:

"1. A ~~method~~ **process** for producing a **scorch resistant** carboxyl group-containing rubber wherein a dry rubber is produced from a polyvinyl alcohol-containing latex of a carboxyl group-containing rubber by continuously carrying out coagulation, dewatering, washing and drying in a dewatering/drying apparatus of a screw extruder type, characterized in that

- a coagulating agent containing ammonium borate is used **in an amount of from 0.2 to 15 parts by mass per 100 parts by mass of the polymer constituting the rubber, and in that**
- **in addition to the coagulating agent, a gelling agent for the polyvinyl alcohol is mixed to the coagulating agent, wherein the gelling agent is a compound containing a sulfate group selected from potassium sulfate, ferrous sulfate, copper sulfate, zinc sulfate, aluminum sulfate, potash alum and sulphuric acid."**

The following documents were further filed by the appellant with letter of 10 January 2013:

A1: printout of the Japanese Wikipedia page at the following URL:

"http://ja.wikipedia.org/wiki/%E3%83%9B%E3%82%A6%E9%85%B8"

A2: printout from "weblio" showing the search result for the Japanese characters used for ammonium borate in the present application

A3: product information of ammonium borate in the website of Yoneyama-chem.co.jp/product/detail/057.html

VI. In the communication issued on 21 November 2012 accompanying the summons to oral proceedings and in two communications issued on 21 January 2013, the Board identified relevant issues to be addressed during the oral proceedings. It was in particular pointed out that, regarding clarity (Art. 84 EPC), the meaning of the terms "gelling agent", "coagulating agent" and "ammonium borate" would have to be discussed. Reference was made to the following documents:

D5: Chemical Abstract Registry Database: Registry numbers 12007-89-5, 27522-09-4, 12007-58-8, 12007-57-7

D6: ChemIDplus Database: Registry numbers 12007-89-5, 27522-09-4, 12007-58-8, 12007-57-7

D7: English translation of claim 1 of the application as filed (D0)

VII. At the beginning of the oral proceedings held on 5 February 2013, the Board explained that, regarding

- clarity of the main request filed with letter of 4 January 2013, due to the overlap in the definitions of the "coagulating agent" and the "gelling agent" according to claim 1, it was not clear whether
- the amount of 0.2-15 parts referred to the amount of "coagulating agent" alone or to the sum of "coagulating agent" and "gelling agent";
 - "ammonium sulfate" was to be considered as a "coagulating agent" or a "gelling agent for polyvinyl alcohol";
 - the subject-matter of claim 4 encompassed processes wherein two or three different compounds were used.

During the course of the oral proceedings, the appellant filed a new main request in replacement of the former main request.

Claims 1, 4 and 5 of that main request read as follows:

"1. A ~~method~~ **process** for producing a **scorch resistant** carboxyl group-containing rubber wherein a dry rubber is produced from a polyvinyl alcohol-containing latex of a carboxyl group-containing rubber by continuously carrying out coagulation, dewatering, washing and drying in a dewatering/drying apparatus of a screw extruder type, characterized in that coagulation is carried out with a coagulating agent containing ammonium ~~berate~~ **pentaborate, wherein the amount of the coagulating agent is from 0.2 to 15 parts by mass per 100 parts by mass of the polymer constituting the rubber.**"

"4. ~~The method for producing a carboxyl group-containing rubber~~ **process** according to any one of

Claims 1 to 3, wherein the coagulating agent is a coagulating agent containing ammonium ~~borate~~ **pentaborate** and ammonium sulfate together."

"5. The ~~method for producing a carboxyl group containing rubber~~ **process** according to any one of Claims 1 to 4, wherein a gelling agent for the polyvinyl alcohol is mixed to the coagulating agent."

VIII. The appellant's arguments that are relevant to the present decision may be summarised as follows:

Admissibility of the main request

- (a) The main request was filed as a reply to the objection of lack of clarity raised against the main request filed with letter of 4 January 2013.
- (b) According to the EPC and as confirmed in decision T 700/05 (of 18 September 2008; not published in OJ EPO) the authentic text of the present application was the Japanese text of application WO 02/50126.

The Japanese characters in claim 1 of the original text of the present application designating the ammonium salt corresponded to "ammonium borate" in the sense of "ammonium pentaborate" (emphasis by the Board). Documents A1-A3 showed that the same Japanese characters were used for both terms. Compounds comprising more than one borate ion were mentioned on page 9, line 27 and page 10, line 1 of the application as filed using terms such as "tetraborate". Hence, the term "borate compound"

according to claim 1 was to be read as an anionic compound comprising a single borate anion. Its meaning was, thus, limited to the specific compound ammonium pentaborate and could not be read as a generic term encompassing polyvalent ions comprising more than one borate anion.

- (c) The improvement in terms of Mooney scorching time shown in Table 1 of the application as filed could only be explained if something technically relevant had happened between the examples illustrative of the invention and the comparative examples. That improvement could only be explained if the term "ammonium borate" was read in its specific sense, i.e. "ammonium pentaborate", and not in its generic sense.
- (d) Considering that the wording of the text of the original Japanese application was not ambiguous, it must have been considered at the search stage by the JPO so that the main request did not represent a new case.
- (e) For those reasons the main request was admissible.

Auxiliary request 1

- (f) Claim 1 was directed to a process. The wording "a gelling agent ... is mixed to the coagulating agent" (underlining by the Board) imposed that two different compounds were used as "coagulating agent" and "gelling agent". That reading of the claim was in line with pages 9-10 of the description, wherein the terms "coagulating agent"

and "gelling agent" in the sense of the present application were defined in more detail. According to the wording of claim 1 the compound containing a sulfate group was a "gelling agent" and not a "coagulating agent".

- (g) According to the description, "ammonium sulfate" could form part of the "coagulating agent" and was, thus, not a "gelling agent" in the sense of the present application.
- (h) The requirements of Art. 84 EPC were therefore met.

Auxiliary request 2

- (i) The "gelling agent" defined in claim 1 should be selected from a list of compounds comprising specific cations. Hence, a clear distinction was made between those compounds and both ammonium borate as well as ammonium sulfate, the latter forming part of the coagulating agent defined in claims 1 or 4. No overlap existed any more between the "gelling agent" defined in claim 1 and the "coagulating agent" defined in claim 4. Besides, the specific cation of those compounds represented a clear distinguishing feature of the subject-matter claimed over the cited prior art.
- (j) In order to avoid any discrepancy between the claims and the description, the latter would have to be adapted accordingly.
- (k) The compounds identified as "gelling agent" in the application as filed which were not mentioned as

such in the list of present claim 1, were not "coagulating agents" in the sense of the present application.

(1) The requirements of Art. 84 EPC were therefore met.

IX. The appellant (applicant) requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request filed during the oral proceedings on 5 February 2013, alternatively on the basis of auxiliary requests 1 or 2, both requests filed with letter of 4 January 2013.

X. The Board announced its decision at the end of the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. Admissibility

2.1 The main request was filed by the appellant during the oral proceedings of 5 February 2013 i.e. at a very late stage of the proceedings and after the deadline set in the communication accompanying the summons to oral proceedings (5 January 2013).

2.2 Claim 1 is directed to a process wherein "coagulation is carried out with a coagulating agent containing ammonium pentaborate, wherein the amount of the

coagulating agent is from 0.2 to 15 parts by mass ...". Claims 4 and 5, both dependent on claim 1, require that the coagulating agent contains "ammonium pentaborate and ammonium sulfate together" and that the "gelling agent ... is mixed to the coagulating agent".

- 2.2.1 The lack of clarity of the claims in relation to the terms "coagulating agent" and "gelling agent"
- had already been objected to in the contested decision (section 4.3);
 - had been identified in the communication of the Board accompanying the summons to oral proceedings (section 5);
 - was discussed during the oral proceedings with regard to the main request filed with letter of 4 January 2013.
- 2.2.2 Considering that the same wording as in claims 1 and 4 of the main request filed with letter of 4 January 2013 is used in claims 1, 4 and 5 of the present main request ("coagulation is carried out with a coagulation agent containing ..."; "wherein the amount of the coagulating agent is ..."; "is a coagulating agent containing ... and ammonium sulfate together"; "a gelling agent for the polyvinyl alcohol is mixed to the coagulating agent"), the objection of lack of clarity regarding the terms "coagulating agent" and "gelling agent" has not been eliminated in the subject-matter now being claimed.
- 2.2.3 The main request is, thus, not clearly allowable in respect of Art. 84 EPC.

2.3 Claims 1 and 4 were amended by modifying the term "ammonium borate" to "ammonium pentaborate". As shown by D5-D7, the term "ammonium borate" is a generic term that is used for identifying various boron compounds including "ammonium pentaborate", but is not limited thereto. The appellant, however, argued for the first time with letter dated 10 January 2013 that the application as filed, in the Japanese language, would have been read as being limited to "ammonium pentaborate".

2.3.1 Independently of the merit of the case, that argument of the appellant raises a new and crucial issue that, if admitted, would have to be discussed for the first time during the oral proceedings before the Board. It changed the factual framework of the case to a considerable extent compared to the situation prior to the oral proceedings, in particular during the examination proceedings and the written phase of the appeal proceedings and raises issues which the Board cannot be expected to deal with without adjourning the oral proceedings, contrary to the requirements of Art. 13(3) RPBA.

2.3.2 In addition, the argumentation of the appellant relating to "ammonium pentaborate" could, and in the present case should, have been filed much earlier in the proceedings e.g. either during the examination phase, or together with the statement of grounds of appeal or in reply to the communication of the Board at the latest. There is no reason justifying the submission of that argument less than one month before the oral proceedings before the Board. Such a practice goes against the need for procedural economy.

2.4 For those reasons, the Board decided not to admit the main request to the proceedings (Art. 13(1)(3) RPBA).

Auxiliary request 1

3. Clarity

3.1 Pursuant to Art. 84 EPC the claims, which define the subject-matter for which protection is sought, should be clear.

3.2 There is no definition in the present application of the precise meaning of the terms "coagulating agent" and "gelling agent for the polyvinyl alcohol" according to claim 1, nor has the appellant shown that they have an accepted, well established definition in the art.

3.2.1 According to D2a (page 6, last line to page 7, line 7 and lines 15 to 20; page 7, last two lines to page 8, line 4), boron compounds and/or sulfate containing compounds may be considered both as "coagulating agent" and as "gelling agent for the polyvinyl alcohol".

Due to the overlap in the definition of those terms, it is not clear whether or not the "gelling agent for the polyvinyl alcohol", once mixed with the "coagulating agent" according to present claim 1, then forms part of the "coagulating agent". Under such circumstances, it is not clear if the amount of 0.2-15 parts mentioned in claim 1 refers to the amount of "coagulating agent" before or after addition of the "gelling agent" (which may be at the same time a "coagulating agent").

3.2.2 On page 9, lines 18-21 of the application as filed it is stated that the "coagulating agent" may contain both ammonium borate and ammonium sulfate. However, compounds containing a sulfate group, i.e. including ammonium sulfate, are said to be "gelling agents" in the sense of the present application (page 9, last two lines to page 10, line 2). Although ammonium sulfate is not specifically listed as a "gelling agent" in the application as filed, it is known to be a suitable and even a preferred gelling agent for polyvinyl alcohol (D2a: page 7, last two lines to page 8, line 4, in particular lines 1 and 4). Therefore, it is not clear whether "ammonium sulfate", when present, is to be considered either as a "coagulating agent" or as a "gelling agent for polyvinyl alcohol".

3.3 The appellant argued that from pages 9 and 10 of the application as filed it could be seen which compounds were to be considered as "gelling agent" and "coagulating agent". According to those passages "ammonium sulfate" was a "coagulating agent", not a "gelling agent".

3.3.1 However, page 9, lines 18-21 of the application as filed reads "As the coagulating agent of the present invention, a coagulating agent containing ammonium borate, or a coagulating agent containing both ammonium borate and ammonium sulfate, is used." (emphasis by the Board). Due to the word "containing", the coagulating agent thereby defined encompasses any compound that is suitable as a "coagulating agent". From the wording used, it can in particular not be concluded that any "gelling agent for the polyvinyl alcohol", which is also suitable as "coagulating agent" as known from e.g.

D2a (see section 3.2.1 above) would be excluded from forming part of the coagulating agent.

3.3.2 The passage of page 9, last full paragraph to page 10, line 5 of the application as filed further reads "To the coagulating agent of the present invention, in addition to the above compound, a gelling agent for the polyvinyl alcohol may be mixed ... As the gelling agent which can be mixed, a boron compound such as boric acid, potassium tetraborate, ammonium hydrogen tetraborate or sodium tetraborate (borax), or a compound containing a sulfate group, such as ... , may be mentioned". That passage of the application as filed therefore gives a different definition of a "gelling agent for the polyvinyl alcohol" than mentioned in present claim 1. That discrepancy together with the absence of unambiguous definitions of the terms "coagulating agent" and "gelling agent for the polyvinyl alcohol" renders it unclear whether or not compounds listed as gelling agent in the application as filed that now are not listed as such in present claim 1, but which are known from D2a as being suitable coagulating agents (e.g. boron compounds) are to be considered as "coagulating agents" according to present claim 1.

3.3.3 Finally, considering "ammonium sulfate" only as a "coagulating agent" is neither consistent with claim 1 nor with the passage on page 10, line 2 of the application as filed saying that the gelling agent is "a compound containing a sulfate group". In that respect, page 10, lines 2-5 reads "or a compound containing a sulfate group, such as ..., may be mentioned". Hence, the list of compounds mentioned therein is merely illustrative and not restrictive. It

is not clear whether "ammonium sulfate", when present, is either a "coagulating agent" or a "gelling agent for the polyvinyl alcohol".

3.3.4 For those reasons, the arguments of the appellant can not be followed.

3.4 Hence, it is not possible unambiguously to identify which compounds are encompassed by the term "coagulating agent" according to claim 1. It is further unclear which compounds are to be considered for determining the amount "0.2 to 15 parts by mass ...". Under such circumstances, the scope of claim 1 is not clearly defined and the skilled person is not in a position to determine whether or not he is working within or outside the claims.

3.5 Auxiliary request 1 is, thus, not allowable (Art. 84 EPC).

Auxiliary request 2

4. Clarity

4.1 As compared to claim 1 of auxiliary request 1, claim 1 further imposes that the "gelling agent for the polyvinyl alcohol" be selected from "potassium sulfate, ferrous sulfate, copper sulfate, zinc sulfate, aluminum sulfate, potash alum and sulphuric acid".

4.2 Said amendment restricts the "gelling agent" to be used according to claim 1 to a list of seven specific compounds not comprising "ammonium sulfate". However, in view of the description and due to the use of the

wording "a coagulation agent containing ammonium borate is used ..." (emphasis by the Board), the "coagulation agent" still comprises any other compound(s) suitable as a coagulation agent. This includes e.g. boron compounds and compounds containing a sulfate group as mentioned in D2a (page 6, last line to page 8, line 4) but which are not listed as "gelling agent for polyvinyl alcohol" in present claim 1. Hence, the ambiguity concerning gelling agents known to be suitable "coagulating agents" and which are not mentioned in claim 1 is still present. It remains in particular unclear whether or not such compounds fall under the term "coagulating agent" according to claim 1 and/or whether "ammonium sulfate", when present, is to be considered as a "coagulating agent". Therefore, the conclusions drawn in section 3.4 above also apply to present claim 1.

- 4.3 During the oral proceedings before the Board the appellant argued that the skilled person could rely on the application as filed to understand that compounds not listed as "gelling agents for the polyvinyl alcohol" in present claim 1 but that were listed as such on said pages 9-10 of the application as filed should nevertheless not be considered as "coagulating agents". However, the description of a granted patent may be different from that of an application as filed, in particular as in the present case where the description would have to be adapted to the granted claims. It can not be accepted that one would have to rely on the content of the application as filed in order to identify which compounds are "coagulating agents" or "gelling agents for the polyvinyl alcohol", respectively, in the sense of present claim 1 which the

appellant requests to be granted. The necessity of doing so shows all the more that the claims are unclear.

4.4 For those reasons, the requirements of Art. 84 EPC are not met and auxiliary request 2 is not allowable.

5. As none of the requests of the appellant/applicant fulfils the requirements of the EPC, the application has to be refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

E. Görgmaier

B. ter Laan