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Datasheet for the decision of 18 January 2018

Case Number:	T 1889/14 - 3.3.03
Application Number:	06811067.5
Publication Number:	1939256
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Language of the proceedings:	EN

Title of invention:
CURABLE COMPOSITION

Patent Proprietor:
Kaneka Corporation

Opponents:
Wacker Chemie AG
Henkel AG & Co. KGaA

Relevant legal provisions:
EPC Art. 54, 56
RPBA Art. 13(1)

Keyword:

Novelty - (yes)
Inventive step - (no)
Late-filed auxiliary requests - admitted (yes and no)

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Case Number: T 1889/14 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 18 January 2018

Appellant 1: (Patent Proprietor)	Kaneka Corporation 2-3-18, Nakanoshima, Kita-ku, Osaka (JP)
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Appellant 3: (Opponent 2)	Henkel AG & Co. KGaA Henkelstrasse 57 40589 Düsseldorf (DE)
Representative:	dompatent von Kreisler Selting Werner - Partnerschaft von Patent- und Rechtsanwälten mbB Deichmannhaus am Dom Bahnhofsvorplatz 1 50667 Köln GERMANY
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. 1939256 in amended form.

Composition of the Board:

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

Summary of Facts and Submissions

I. The appeals by the patent proprietor and opponents 1 and 2 lie from the interlocutory decision of the opposition division posted on 9 July 2014 according to which it was held that European Patent 1 939 256 could be maintained in amended form on the basis of the claims according to the second auxiliary request filed with letter of 3 February 2014 and an amended description.

II. Claim 1 of the granted patent read as follows:

"1. A curable composition which comprises:

(A) an organic polymer having a silicon-containing group capable of crosslinking by siloxane bond formation,
(B) a silanol condensation catalyst, and
(C) an adhesion promoter,

and wherein the silanol condensation catalyst (B) is an amine compound (B-1) having a melting point lower than 23°C,

the adhesion promoter (C) comprises an amino group-containing silane coupling agent (C-1) and an epoxy group-containing silane coupling agent (C-2), and

the ratio between the total number (c1) of moles of the nitrogen atom in the amino group-containing silane coupling agent (C-1) and the total number (c2) of moles of the epoxy group in the epoxy group-containing silane coupling agent (C-2), namely the ratio (c1)/(c2), is not higher than 5."

III. Two notices of opposition to the patent were filed requesting revocation of the patent in its entirety.

IV. In the contested decision the following documents were *inter alia* cited:

E1: EP-A-1 179 571
E2: EP-A-1 832 626
E5: EP-A-1 391 484
E11: WO 2004/022618

An experimental report was further submitted by the patent proprietor with letter of 3 February 2014, which will be hereinafter referred to as E12.

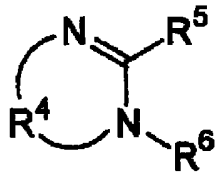
V. The contested decision was based on a main request and on the first and second auxiliary requests, all filed with letter of 3 February 2014.

Claim 1 of the **main request** read as follows:

"1. A curable composition which comprises:

(A) an organic polymer having a silicon-containing group capable of crosslinking by siloxane bond formation, wherein the organic polymer is at least one polymer selected from the group consisting of polyoxyalkylene polymers, saturated hydrocarbon polymers and (meth)acrylate ester polymers,

(B) a silanol condensation catalyst,
which is a cyclic amidine compound (B-1) having a melting point lower than 23°C represented by the general formula (2):



(2)

(wherein R^4 is a divalent organic group and R^5 and R^6 each independently is a hydrogen atom or a monovalent organic group and R^5 and R^6 may be bound together to form a ring structure),

wherein organotin compounds (B-2) may be used at a level of not higher than 0.05 parts by weight per 100 parts of the organic polymer (A),

a carboxylic acid metal salt (B-3) may be used with the ratio between the number (b3) of moles of the carboxylic acid metal salt (B-3) and the number (b1) of moles of the amine compound (B-1), namely the ratio (b3)/(b1), being 0 to not higher than 0.01,

and a carboxylic acid (B-4) may be used with the ratio between the number (b4) of moles of the carboxylic acid (B-4) and the number (b1) of moles of the amine compound (B-1), namely the ratio (b4)/(b1) being 0 to not higher than 0.01, and

(C) an adhesion promoter, comprising

an amino group-containing silane coupling agent (C-1) and an epoxy group-containing silane coupling agent (C-2),

wherein the ratio between the total number (c1) of moles of the nitrogen atom in the amino group-containing silane coupling agent (C-1) and the total

number (c2) of moles of the epoxy group in the epoxy group-containing silane coupling agent (C-2), namely the ratio (c1)/(c2), is not higher than 5."

Claim 1 of the **first auxiliary request** differed from claim 1 of the main request in that the following feature was added between formula (2) and the expression "(wherein R^4 ... ring structure)":

"in an amount of 0.5 to 10 parts by weight per 100 parts by weight of the (A) component organic polymer"

Claim 1 of the **second auxiliary request** corresponded to claim 1 of the first auxiliary request whereby the features directed to compounds (B-2), (B-3) and (B-4) were deleted.

VI. The decision of the opposition division, as far as relevant to the present decision, can be summarised as follows:

- Whereas granted claim 1 restricted the silanol condensation catalyst to compounds (B-1), compositions according to claim 1 of either the main request or the first auxiliary request could comprise other catalysts such as compounds (B-2) to (B-4). Therefore, the requirements of Article 123(3) EPC were not met.

- Since the wording "may be used" according to claim 1 of either the main request or the first auxiliary request was not limiting, the amendments made in respect of compounds (B-2) to (B-4) did not amend the scope of granted claim 1 and, thus, could not overcome the novelty objections raised. Therefore, those requests did not meet the

requirements of Rule 80 EPC.

- The second auxiliary request fulfilled the requirements of Article 123(2)(3) EPC, Rule 80 EPC, Article 54 EPC, in particular over E1 and E2, and Article 56 EPC. In respect of inventive step, it was in particular stated (see section 2.5.6.3):

  "A document not mentioning a technical problem which is at least related to that derivable from the patent specification (bleedout) does not normally qualify as the closest prior art for inventive step purposes, however many technical features it may have in common with the subject-matter of the patent concerned. Therefore it has to be concluded that a technical problem arising from a "closest prior art" disclosure which was irrelevant to the claimed subject-matter (in the sense that it did not mention a problem that was at least related to that derivable from the patent specification) had a form such that its solution could practically never be obvious, because any attempt by the skilled person to establish a chain of considerations leading in an obvious way to the claimed subject-matter was bound to fail (cf. Case Law of the Boards of Appeal, 7th edition, 09/2013, chapter I.D.3.3).".

  Besides, even if E1 were to be considered as closest prior art, an inventive step was acknowledged considering that example 1 and comparative example 1 of the patent in suit showed that the problem of reduced bleedout addressed in the patent in suit was effectively solved (see section 2.5.6.8).

VII. The patent proprietor (appellant 1) lodged an appeal against the above decision and, in its statement of grounds of appeal, requested that the decision of the opposition division be set aside and the patent be maintained on the basis of the main request or any of the first to the seventh auxiliary requests filed therewith, whereby the main request, the first and the second auxiliary requests corresponded to the main request, the first and the second auxiliary requests, respectively, dealt with in the contested decision.

VIII. Opponents 1 and 2 (appellants 2 and 3) both lodged an appeal against the above decision and requested that the decision of the opposition division be set aside and the patent be revoked.

IX. With letters of 26 February 2015 and 25 March 2015 appellants 2 and 3, respectively, submitted arguments in reply to appellant 1's statement of grounds of appeal.

X. With letter of 2 April 2015 appellant 1 submitted arguments in reply to appellants 2 and 3's statements of grounds of appeal.

XI. With letter of 18 November 2015 appellant 1 submitted the fourth to the ninth auxiliary requests in replacement of the then pending fourth to seventh auxiliary requests.

XII. A communication dated 24 July 2017 was issued by the Board in preparation of the oral proceedings.

XIII. With letter of 15 December 2017 appellant 1 submitted a new auxiliary request which was to be dealt with as first auxiliary request, whereby the then pending first

to ninth auxiliary requests were to be renumbered as second to tenth auxiliary requests.

XIV. During the oral proceedings which were held on 18 January 2018 in the presence of all parties appellant 1 filed a new first auxiliary request. The then pending first to tenth auxiliary requests were renumbered as second to eleventh auxiliary requests.

XV. The final requests defended by appellant 1 were therefore as follows:

a) The **main request** filed as main request with appellant 1's statement of grounds of appeal and corresponding to the main request dealt with in the contested decision;

b) The **first auxiliary request** filed during the oral proceedings of 18 January 2018. Claim 1 of said first auxiliary request differed from claim 1 of the main request in that in feature (A) the expression "an organic polymer having a silicon-containing group" was replaced by "an organic polymer having a trimethoxy silyl group";

c) The **second auxiliary request** filed as first auxiliary request with letter of 15 December 2017. Claim 1 of said second auxiliary request differed from claim 1 of the main request in that the following feature was added between features (B-4) and (C):

"wherein silanol condensation catalysts other than (B-2), (B-3) and (B-4) may be used in an amount not higher than 5 parts by weight per 100 parts by weight of the (A) component organic polymer, and"

d) The **third auxiliary request** filed as first auxiliary request with appellant 1's statement of grounds of appeal and corresponding to the first auxiliary request dealt with in the contested decision.

e) The **fourth auxiliary request** filed as second auxiliary request with appellant 1's statement of grounds of appeal and corresponding to the second auxiliary request dealt with in the contested decision.

f) The **fifth auxiliary request** filed as third auxiliary request with appellant 1's statement of grounds of appeal. Claim 1 of said fifth auxiliary request differed from claim 1 of the main request in that

- the following feature was added between formula (2) and the expression "(wherein R^4 ... ring structure)":

  "in an amount of 0.5 to 10 parts by weight per 100 parts by weight of the (A) component organic polymer"; and

- the features directed to compounds (B-2) to (B-4) in feature (B) were deleted and replaced by the following features added at the end of the claim:

  "organotin compounds (B-2) at a level of not higher than 0.05 parts by weight per 100 parts of the organic polymer (A),

  a carboxylic acid metal salt (B-3) with the ratio between the number (b3) of moles of the carboxylic acid metal salt (B-3) and the number (b1) of moles of the amine compound (B-1), namely the ratio (b3)/(b1), being 0 to not higher than 0.01, and

a carboxylic acid (B-4) with the ratio between the number (b4) of moles of the carboxylic acid (B-4) and the number (b1) of moles of the amine compound (B-1), namely the ratio (b4)/(b1), being 0 to not higher than 0.01."

g) The **sixth auxiliary request** corresponding to the fourth auxiliary request filed with appellant 1's letter of 18 November 2015. Claim 1 of said sixth auxiliary request differed from claim 1 of the main request in that

- the following feature was added between formula (2) and the expression "(wherein R^4 ... ring structure)":

"in an amount of 0.5 to 10 parts by weight per 100 parts by weight of the (A) component organic polymer"; and

- the features directed to compounds (B-2) to (B-4) in feature (B) were deleted and replaced by the following features added at the end of the claim:

"wherein carboxylic acid metal salts (B-3) and carboxylic acids (B-4) are absent."

h) The **seventh auxiliary request** filed as fifth auxiliary request with appellant 1's letter of 18 November 2015 and corresponding to the fourth auxiliary request filed with appellant 1's statement of grounds of appeal. Claim 1 of said seventh auxiliary request differed from claim 1 of the main request in that

- the following feature was added between formula (2) and the expression "(wherein R^4 ... ring structure)":

  "in an amount of 0.5 to 10 parts by weight per 100 parts by weight of the (A) component organic polymer"; and

- the features directed to compounds (B-2) to (B-4) in feature (B) were deleted and replaced by the following features added at the end of the claim:

  "wherein organotin compounds (B-2) are substantially absent, and carboxylic acid metal salts (B-3) and carboxylic acids (B-4) are substantially absent."

i) The **eighth auxiliary request** filed as sixth auxiliary request with appellant 1's letter of 18 November 2015. Claim 1 of said eighth auxiliary request differed from claim 1 of the main request in that

- the following feature was added between formula (2) and the expression "(wherein R^4 ... ring structure)":

  "in an amount of 0.5 to 10 parts by weight per 100 parts by weight of the (A) component organic polymer"; and

- the features directed to compounds (B-2) to (B-4) in feature (B) were deleted and replaced by the following features added at the end of the claim:

  "wherein organotin compounds (B-2), carboxylic acid

metal salts (B-3) and carboxylic acids (B-4) are absent."

j) The **ninth auxiliary request** filed as seventh auxiliary request with appellant 1's letter of 18 November 2015. Claim 1 of said ninth auxiliary request differed from claim 1 of the main request in that

- in feature (A) the expression "an organic polymer having a silicon-containing group" was replaced by "an organic polymer having a trimethoxy silyl group";

- the following feature was added between formula (2) and the expression "(wherein R^4 ... ring structure)":

"in an amount of 0.5 to 10 parts by weight per 100 parts by weight of the (A) component organic polymer"; and

- the features directed to compounds (B-2) to (B-4) in feature (B) were deleted and replaced by the following features added at the end of the claim:

"wherein organotin compounds (B-2), carboxylic acid metal salts (B-3) and carboxylic acids (B-4) are absent."

k) The **tenth auxiliary request** filed as eighth auxiliary request with appellant 1's letter of 18 November 2015. Claim 1 of said tenth auxiliary request differed from claim 1 of the ninth auxiliary request in that the feature added between formula (2) and the expression "(wherein R^4 ...

ring structure)" was modified so as to read:

"in an amount of ~~0.5 to 10~~ **1 to 5** parts by weight per 100 parts by weight of the (A) component organic polymer" (deletion as compared to claim 1 of the ninth auxiliary request in ~~strikethrough~~, additions in **bold**).

l) The **eleventh auxiliary request** filed as ninth auxiliary request with appellant 1's letter of 18 November 2015. Claim 1 of said eleventh auxiliary request differed from claim 1 of the tenth auxiliary request in that the curable composition further comprised

"(D) a polymer plasticiser, which is a polyether"

XVI. The arguments of appellant 1, as far as relevant to the present decision, were essentially as follows:

Main request

(a) Novelty over E1

The specific combination of features according to operative claim 1 could only be arrived at after combining several passages of the claims and/or the description of E1.

Starting from the disclosure of an example of E1 one would have, in order to arrive at the subject-matter of operative claim 1, to use the catalyst 1,8-diazabicyclo(5,4,0)undecene-7 (hereinafter "DBU") disclosed in paragraph 49 of E1 instead of the most preferred silanol condensation catalyst system also taught in paragraph 49 of E1. In that

respect the feature "may be used" of operative claim 1 indicated that each of compounds (B-2) to (B-4) could either be absent or at most present in an amount not higher than that indicated in claim 1. Even if the skilled person were to modify the catalyst system of E1, various other possibilities other than completely replacing stannous dioctylate could be contemplated e.g. replacing lauryl amine by DBU, replacing only part of stannous octylate and/or laurylamine by DBU, which would lead to compositions not according to operative claim 1.

For those reasons, the subject-matter of claim 1 was not directly and unambiguously disclosed in E1.

(b) Inventive step

The problem of bleedout addressed in the patent in suit was not known in the art before the priority date of the patent in suit. Under those circumstances, none of the cited document was a suitable closest prior art and no hint could be found in the prior art on how to solve that problem. Therefore, the subject-matter being claimed was bound to be inventive.

Alternatively, should example 1 of E1 be considered as closest prior art, the subject-matter of operative claim 1 differed therefrom in the nature of the silanol condensation catalyst system.

Examples 1-6 of the patent in suit and the examples of E12 showed that the problem solved over E1 was to provide a curable composition comprising a reactive silyl group-containing organic polymer

component which allowed slight bleedout of a liquid compound to occur at the cured product surface and which showed good adhesiveness and water-resistant adhesiveness using an amine compound as a non-organotin catalyst.

Considering that it was known in the art that the choice of a catalyst system was strongly dependent on the nature of the polymer it was used with, finding an alternative to the catalyst system of example 1 of E1 was *per se* not obvious. In that respect, DBU was disclosed in paragraph 49 of E1 within a long list of alternative catalysts but there was no hint in E1 to replace stannous octylate by DBU, in particular not in order to avoid bleedout. It was further highly questionable if there was any motivation to modify the preferred catalyst system taught in E1 at all. Apart from E11, none of the other documents cited by appellants 2 and 3 disclosed the use of DBU alone as an effective catalyst for the polymer used in example 1 of E1. In that respect, the teaching of E11 was limited to highly reactive polymers which were different from those used in example 1 of E1. Therefore, the combination of E1 with E11 was not obvious.

For those reasons, an inventive step was given.

First auxiliary request - Admittance

(c) The amendment which was made in the first auxiliary request aimed at addressing the objection retained by the Board against the main request, which only became clear at the oral proceedings. Considering that many objections had been raised by

appellants 2 and 3, appellant 1 could not know which one, if any, would succeed. The amendment made was easy to understand and was not related to new issues. Therefore, the first auxiliary request should be admitted into the proceedings.

Second, sixth and eighth auxiliary requests - Admittance

(d) Questioned by the Board, appellant 1 declared during the oral proceedings that they had no additional argument in respect of inventive step as compared to the main request, as far as the second, sixth and eighth auxiliary requests were concerned.

Third to fifth auxiliary requests - Inventive step

(e) There was no hint in E1 to use DBU in the specific amount now being defined in claim 1. There was no reason why the skilled person would use DBU in the same amount as the different catalyst system used in example 1 of E1. Therefore, the subject-matter of claim 1 of each of the third to the fifth auxiliary requests was inventive.

Seventh auxiliary request

(f) Since the seventh auxiliary request had been filed as fourth auxiliary request together with the statement of grounds of appeal, there was no reason for not admitting it into the proceedings.

(g) Questioned by the Board, appellant 1 declared during the oral proceedings that they had no additional argument in respect of inventive step as

compared to the third to fifth auxiliary requests.

Ninth to eleventh auxiliary requests

(h) The ninth to the eleventh auxiliary requests only differed from the fifth to the seventh auxiliary requests filed with appellant 1's statement of grounds of appeal in that the term "substantially absent", which had been objected to by appellants 2 and 3 as lacking clarity, had been modified to "absent". Since those requests had been filed early enough in the proceedings, they could not surprise the other parties. Also, the amendment made was easy to understand. Therefore, it would not be justified not to admit any of those requests into the proceedings.

(i) Whereas the composition of example 1 of E1 contained an organotin catalyst, according to the preferred embodiment taught in the description thereof, such components were now excluded.

Although polymers as now defined in claim 1 were possibly disclosed in the description of E1, they were not used in example 1 of E1.

The subject-matter of operative claim 1 was, thus, completely different from the closest prior art considered for the main request. In particular, E1 contained no hint for combining the specific polymers (A) and the catalyst (B-1) according to operative claim 1.

That combination was not arbitrary but purposive since it led to a particularly efficient crosslinking, as explained in paragraph 37 of the

patent in suit and as derivable from the comparison of examples 6-7 of E12.

Therefore, the subject-matter of the ninth auxiliary request was inventive.

(j) The subject-matter of claim 1 of the tenth auxiliary request was further limited in that in feature (B) the amount was modified to 1 to 5 pbw. There was no information at all in E1 in that respect. In example 1 of E1, a total amount of 5.4 pbw catalyst was used, which was outside the range now defined in claim 1. Therefore, there was no hint in the cited prior to the combination of features now being claimed and the subject-matter of the tenth auxiliary request was inventive.

(k) No further argument was put forward in respect of the inventive step of the eleventh auxiliary request.

XVII. The arguments of appellants 2 and 3, as far as relevant to the present decision, may be summarised as follows:

Main request

(a) Novelty over E1

All the features of operative claim 1 were disclosed in the claims or the description of E1.

Besides, the subject-matter of operative claim 1 only differed from the compositions of the examples of E1 in that a catalyst (B-1) of formula (2) was present instead of the combination of stannous octylate, which was a compound (B-2) or (B-3)

according to operative claim 1, and lauryl amine used therein. In that respect, the wording "may be used" in operative claim 1 indicated that compounds (B-2) to (B-4) were optional components of the composition according to claim 1, so that those features could be ignored. Considering that DBU, which was a compound (B-1) according to operative claim 1, was taught as an alternative catalyst in paragraph 49 of E1, which could be used either alone or in combination with other catalysts mentioned therein, a composition according to operative claim 1 could be arrived at by replacing the catalyst used in the examples of E1 by any alternative catalyst taught in paragraph 49 of E1, in particular DBU.

For those reasons, the subject-matter of operative claim 1 was not novel over E1 as a whole or over its examples.

(b) Inventive step

E1, in particular example 1 thereof, was a suitable closest prior art since it was directed to the same problem as in the patent in suit, namely to provide curable compositions having good adhesiveness and water-resistant adhesiveness.

The subject-matter of operative claim 1 differed from the composition of example 1 of E1 in that it comprised a compound (B-1) and less organotin compound (B-2).

In the absence of a comparison with a composition according to example 1 of E1, it was not shown that the technical problem formulated by appellant 1 was

effectively solved. In that respect, comparative example 1 of the patent in suit did not illustrate the teaching of example 1 of E1 in respect of the ratio (c1)/(c2). In particular, it was derivable from the results of the patent in suit that a composition according to example 1 of E1 using e.g. DBU as catalyst would not show any bleedout. The compositions prepared in E12 also did not illustrate the teaching of example 1 of E1. Under those circumstances, the problem to be solved over E1 could only be formulated as being the provision of a curable composition comprising a reactive silyl group-containing organic polymer component which showed good adhesiveness and water-resistant adhesiveness and which was less toxic to the environment.

The skilled person seeking for a less toxic composition would obviously use any of the alternative catalysts listed in paragraph 49 of E1, in particular DBU which was a compound (B-1) according to claim 1, instead of the toxic catalyst stannous octylate. In that respect, E11 further taught that DBU was a very effective amine catalyst.

For those reasons, the subject-matter of operative claim 1 was not inventive over E1 alone or in combination with E11.

First auxiliary request - Admittance

(c) All the objections submitted against the main request at the oral proceedings were already on file. Therefore, admitting the first auxiliary request into the proceedings would go against the

stipulations of Article 12(2) RPBA. Considering that the amendment made was taken from the description, it could not have been foreseen and took appellants 2 and 3 by surprise. Although a similar amendment was made in former auxiliary requests, the specific combination of features according to operative claim 1 had never been claimed earlier. For those reasons, the first auxiliary request should not be admitted into the proceedings.

Second, sixth and eighth auxiliary requests - Admittance

(d) The second, sixth and eighth auxiliary requests were filed late. The second auxiliary request had in particular been filed after oral proceedings had been arranged. Besides, claim 1 of each of those requests did not remove the objection of lack of inventive step put forward against the main request. Therefore, the second, sixth and eighth auxiliary requests should not be admitted into the proceedings.

Third to fifth auxiliary requests - Inventive step

(e) The skilled person would use DBU in the same amount as the other catalysts used in example 1 of E1 and/ or taught in the description of E1. In the absence of any effect related to the amount of catalyst, the amended feature constituted at most a mere routine measure to be taken by the skilled person. Therefore, the third to the fifth auxiliary requests were not inventive.

Seventh auxiliary request

(f) Because of the various renumbering done in the course of the proceedings, it was unclear at which stage said request was first presented.

(g) The amendments made in claim 1 did not overcome the objection of lack of inventive step put forward against the third to fifth auxiliary requests.

(h) For those reasons, the seventh auxiliary request should not be admitted into the proceedings, and if it were to be admitted, it was not inventive.

Ninth to eleventh auxiliary requests

(i) Each of the ninth to the eleventh auxiliary requests were filed late. Appellant 1 should have known that the term "substantially absent" lacked clarity and would be objected to. Each of those requests constituted a new combination of features which had not been claimed as such before and which could possibly be related to new issues in respect of inventive step, in particular regarding the nature of the polymer (A). For those reasons, those requests should not be admitted into the proceedings.

(j) The polymers now defined in claim 1 of the ninth auxiliary request were encompassed by the teaching of E1 and mentioned therein as alternative to those used in example 1 of E1. Besides, they were known from E11 and E5 as being particularly reactive, even when using an amine catalyst such as DBU instead of the usual organotin catalysts. Therefore, the effect related to an improved

efficiency relied upon by appellant 1 was already known in the art. For those reasons, the subject-matter of the ninth auxiliary request was not inventive.

(k) The amended range of amounts specified in feature (B) was very similar if not identical to that used for the catalyst in example 1 of E1. That range was further not shown to be related to any effect and was, thus, arbitrary and could not confer an inventive step.

(l) The plasticisers now defined as component (D) were usual in the art and even taught as a preferred component in paragraph 53 of E1. Therefore, that feature could not contribute to an inventive step.

XVIII. Appellant 1 requested that the opposition division's decision be set aside and that the patent be maintained in amended form according to either:

- the main request filed with the statement of grounds of appeal, or, alternatively, according to
- the first auxiliary request filed during the oral proceedings, or to
- the second auxiliary request filed as first auxiliary request with letter dated 15 December 2017, or
- any of the third to the fifth auxiliary requests filed as first to third auxiliary requests with the statement of grounds of appeal, or
- any of the sixth to the eleventh auxiliary requests filed as fourth to ninth auxiliary requests with the letter of 18 November 2015.

Appellants 2 and 3 requested that the decision under appeal be set aside and that the European patent No. 1 939 256 be revoked. They further requested that:

- the first auxiliary request filed during the oral proceedings and
- the second auxiliary request filed as first auxiliary request with letter dated 15 December 2017 as well as
- the sixth to eleventh auxiliary requests filed as fourth to ninth auxiliary requests with the letter of 18 November 2015

be not admitted into the proceedings.

Reasons for the Decision

Main request

1. Novelty over E1

1.1 Appellants 2 and 3 argued that the subject-matter of operative claim 1 was anticipated by E1 as a whole or by the compositions prepared in the examples of E1.

1.2 Reading of claim 1

During both the opposition and the appeal proceedings, the scope of claim 1 as granted and as maintained was interpreted differently by the parties and the reading of claim 1 was determinant for the opposition division's decision regarding the main request and the first auxiliary request dealt with in the contested decision (see above section VI). Therefore, the points of dispute between the parties regarding the scope of operative claim 1 are addressed hereinafter.

In that respect, both claim 1 as granted and according to the main request is drafted using an open formulation ("which comprises ..."), which does not exclude the presence of any other components different from those specified therein, in particular other silanol condensation catalyst(s) than those specified in claim 1 (catalyst (B-1) in granted claim 1 and catalysts (B-1) to (B-4) in claim 1 according to the main request). That reading is further in line with the indication in paragraphs 108-112 of the patent specification that silanol condensation catalysts (B-1) to (B-4) and also other silanol condensation catalysts than (B-1) to (B-4) may further be present in specified low amounts. Therefore, the opposition division's reading of the wording of the claims, according to which any other catalyst different from those specifically mentioned were excluded from the compositions being claimed, is not shared (see section VI above in respect of the main request).

In addition appellants 2 and 3 argued, as did the opposition division (section 2.3.2.3), that the wording "may be used" present in operative claim 1 in relation to components (B-2) to (B-4) was not limiting.

However, the wording "may be used" is not present on its own in operative claim 1, but in combination with an amount of "not higher than" for compound (B-2) or with a condition on a molar ratio (b3)/(b1) or (b4)/(b1) effectively limiting the amount of each of compounds (B-3) and (B-4) as compared to the amount of compound (B-1). It is the Board's judgement that the combination of those expressions only makes sense if it is read as indicating that components (B-2) to (B-4) may each either be absent or at most present in an

amount not higher than that indicated in claim 1. That reading is not only derivable from the wording of the claim itself, but is also confirmed by the indication given in paragraphs 108 to 111 of the patent in suit according to which other catalysts different from (B-1) may be present, e.g. either (B-2) in low amounts such as not higher than 0.05 pbw per 100 parts of (A) (page 15, lines 35-38 and 49-51), (B-3) in amounts such that (b3)/(b1) is not higher than 0.01 (page 16, lines 2-5), (B-4) in amounts such that (b4)/(b1) is not higher than 0.01 (page 16, lines 47-50) or other (metal containing) silanol catalysts in an amount such that the effects of the amine compounds (B-1) are not lessened (page 16, lines 51-53).

Therefore, the wording "may be used" is, in the context of operative claim 1, effectively limiting and cannot be ignored, contrary to appellants 2 and 3's view and to the opposition division's conclusion (see section VI above in respect of the first auxiliary request).

1.3 E1 discloses curable compositions comprising (a) an organic polymer having at least one reactive silicon group in one molecule, (b) an amino group-substituted silane compound and (c) an epoxy groups-substituted silane compound (claim 1).

Polymer (a) may be a polyoxyalkylene polymer according to feature (A) of operative claim 1, but is not limited to the classes of polymers specified in operative claim 1 (E1: claim 3 and paragraphs 11-12).

Components (b) and (c) correspond to features (C-1) and (C-2) of operative claim 1. According to paragraphs 41 and 43 of E1, components (b) and (c) may be used in amounts of 0.1 to 15 pbw but no limitation is indicated

regarding the molar ratio (b):(c). In view of their respective possible amounts, the requirement of operative claim 1 according to which (c1):(c2) should be "not higher than 5" is not always mandatorily satisfied.

According to paragraph 49 of E1 the silanol condensation catalyst may be selected *inter alia* among the following components, used singly or in combination of two or more (page 8, lines 57-58):

- organotin compounds (page 8, lines 43-46) corresponding to feature (B-2) of operative claim 1 (see paragraph 108 of the patent in suit);
- carboxylic acid metal salts (page 8, line 44) corresponding to feature (B-3) of operative claim 1, taking into account that the tin carboxylates according to paragraph 49 of E1 are also mentioned as component (B-3) in paragraph 109 of the patent in suit (the fact that such compounds corresponded to either component (B-2) or (B-3) was argued by appellant 2 e.g. in its letter of 13 December 2017 (page 5, in reference to (B-2) and (B-3)), which was not contested by appellant 1);
- amine compounds (page 8, lines 54), whereby the sole component which was argued to be according to formula (2) of operative claim 1 is DBU (page 8, line 54).

No information is provided in that passage regarding the amount of organotin compound (B-2) and/or the relative amount of carboxylic acid metal salt (B-3) to amine compound. Therefore, the amounts of components (B-2) and (B-3) defined in operative claim 1 are not mandatorily satisfied.

Besides, none of the preferred combination of silanol condensation catalysts mentioned at page 9, lines 1-6 of E1 comprise a component corresponding to feature (B-1) of operative claim 1.

In view of the above the specific combination of features according to operative claim 1 can only be arrived at when considering E1 as a whole after performing a series of selections within the ambit of E1 (type of polymer; molar ratio of amino group and epoxy group containing silane coupling agents; nature of the silanol condensation catalyst; amounts of components corresponding to (B-2) and (B3)). The subject-matter of claim 1 is therefore not directly and unambiguously derivable from the general disclosure of E1.

1.4 Example 1 of E1 is directed to a curable composition comprising

- 100 pbw polyoxypropylene corresponding to feature (A) of operative claim 1;

- as silanol condensation catalyst, a combination of 5 pbw stannous octylate, which is a compound (B-2) or (B-3) according to claim 1 (see section 1.2.3, fourth paragraph), and lauryl amine, which is an amine catalyst different from compounds (B-1) to (B-4) according to operative claim 1 (that catalyst combination corresponds to the most preferred catalyst taught at page 8, line 58 to page 9, line 6 of E1);

- a combination of two amino group substituted silane compounds "A-1120" and "A-187" corresponding to the adhesion promoters (C-1) and (C-2) according to

operative claim 1. Appellant 2's argument (see letter of 13 December 2017: page 7, last row and right column of the Table) according to which the molar ratio of (C-1) and (C-2) used in example 1 of E1 (or in the other examples of E1) was "not higher than 5" according to operative claim 1, was not contested by appellant 1.

In view of the above, it is clear that example 1 of E1 on its own is not novelty destroying and that it could become novelty destroying only upon specific modifications thereof.

In this respect appellants 2 and 3 argued that the subject-matter of claim 1 could be arrived at by simply replacing stannous octylate by DBU in example 1 of E1, which would be considered as disclosed in E1 since both components were disclosed as alternative catalysts at paragraph 49 of E1.

The Board does not agree. Firstly, the combination of stannous octylate and laurylamine used in example 1 of E1 is indicated at page 9, lines 3-6 of E1 as the preferred catalyst combination, which is not the case for DBU. Besides, according to the teaching of paragraph 49, the silanol catalysts indicated therein may be used singly or in combination of two or more of them (page 8, lines 57-58) and DBU is disclosed in the same group as lauryl amine (page 8, lines 50-54). Therefore, if the catalyst system of example 1 of E1 were to be modified, various other possibilities than that mentioned by appellants 2 and 3 could be contemplated, e.g. replacing lauryl amine by DBU, replacing only part of stannous octylate and/or laurylamine by DBU, replacing part of the catalyst system by an organotin compound according to compounds

(B-2) (also disclosed in paragraph 49 of E1). For those other embodiments, the specific combination of features according to operative claim 1, e.g. use of (B-1), ratio (b3)/(b1), amount of compound (B-2), would not result. Therefore, the subject-matter of claim 1, which could be obtained only by modifying example 1 of E1 according to specific selections which are not taught in the document, cannot be considered as directly and unambiguously derivable from example 1 of E1, even if read in view of the whole disclosure of the document.

1.5 For the same reasons, the same conclusion as for example 1 of E1 is reached for any of the other examples of E1, which all make use of the same silanol condensation catalyst system.

1.6 In view of the above the specific combination of features defined in operative claim 1 is not directly and unambiguously derivable from E1. Therefore, the subject-matter of claim 1 is novel over E1.

2. Inventive step

2.1 Closest prior art

2.1.1 The patent in suit aims at providing a curable composition comprising a reactive silyl group-containing organic polymer which allows slight bleedout of a liquid compound to occur at the cured product surface and shows good adhesiveness and water-resistant adhesiveness, whereby the composition is mostly free of organotin catalysts (claim 1; paragraphs 8, 9, 82, 98, 177, 180; examples 1-6). The compositions are usable as sealants and adhesives (claims 11, 12; paragraphs 116, 167, 182, 183).

According to paragraph 7 of the patent in suit the bleedout effect mentioned above is described as being a problem that occurs when using an amine compound such as DBU as silanol condensation catalyst for reactive silyl group-containing organic polymers. In particular, it was found by appellant 1 that the cured surface, when touched by the hand, stained the hand due to the movement of a liquid compound to the cured product surface, i.e. said liquid compound bleeded out of the cured composition (see end of paragraph 98 and paragraph 174 of the patent in suit), which was not desirable.

2.1.2 In that respect appellant 3's argument according to which reduced bleedout and good adhesiveness would be one and the same problem is not supported by any evidence. In particular, although the opposition division had already indicated that no evidence was on file to support appellant 3's view (last paragraph of section 2.5.6.2), no further evidence was submitted in appeal in that respect. Rather, comparative examples 1 and 2 of the patent in suit contradict that view. Therefore, considering the information on file, reduced bleedout and good adhesiveness constitute different problems.

2.1.3 E1 deals with curable compositions comprising an organic polymer having at least one reactive silicon group per molecule and which exhibit low modulus, high break strength, high elongation and excellent water-resistant adhesiveness to mortar (claim 1; paragraphs 7, 8). The compositions are used e.g. as sealants and adhesives (paragraph 67). Water-resistant adhesiveness is explicitly indicated as a goal to be achieved in E1 and it was indicated in appellant 1's letter of 15 December 2017 (end of section 2.4) that

the standard ASTM C794, which is cited in paragraph 72 of E1 in respect of example 1, evaluates the water-resistant adhesiveness, which was not contested by appellants 2 and 3. Therefore, E1 effectively discloses compositions having good water-resistant adhesiveness. Under those circumstances, E1, in particular its example 1, is a suitable starting point for the assessment of the inventive step.

2.1.4 Appellant 1 argued, as did the opposition division, that the problem of bleedout was not known in the art before the priority date of the patent in suit and that none of the document cited by appellants 2 and 3 in fact disclosed that problem. Therefore, none of the cited documents, including E1, represented a suitable closest prior art. The opposition division's conclusion was in particular based on a passage of the Case Law of the Boards of Appeal of the EPO, 8th edition, 2016, I.D.3.3 related to T 644/97 (see section VI above in relation to the second auxiliary request).

However, according to the EPO case law, the closest prior art for assessing inventive step is a prior art disclosing subject matter conceived for the same purpose or aiming at the same objective as the claimed invention and having the most relevant technical features in common, i.e. requiring the minimum of structural modifications (Case Law, supra, I.D.3.1).

Although E1 does not deal with the issue of reducing the bleedout at the cured product surface, it was not disputed that E1 discloses compositions with good adhesiveness and water-resistant adhesiveness, as in the patent in suit.

Besides, it is derivable from paragraphs 4, 5, 8, 9,

82, 98, 177, 180 of the patent in suit that the primary aim addressed therein was to find silanol condensation catalysts which were less toxic than those based on an organotin catalyst. The problem of bleedout only occurred when other catalyst systems than the toxic metal containing catalysts generally used were evaluated (paragraph 7 of the patent in suit). Also, it is noted that during the whole proceedings, appellants 2 and 3 contested that the problem of bleedout addressed in the patent in suit was effectively solved. Under such circumstances, in the Board's view, it would not be appropriate to disregard a cited prior art as closest prior art, only because it does not specifically disclose one of the relevant technical effects, which specific effect is possibly not to be considered as being effectively achieved.

Therefore, in the circumstances of the present case, it cannot be concluded that E1 is a prior art disclosure which is irrelevant to the claimed subject-matter in the sense that it does not mention a problem that is at least related to that derivable from the patent specification, as considered by appellant 1 and by the opposition division. In particular, it cannot be concluded that E1 does not represent a promising starting point for the skilled person aiming at solving the technical problem of reduced toxicity while obtaining good adhesiveness and water-resistant adhesiveness set out in the patent specification.

The above conclusion, according to which E1 is a suitable closest prior art, is further confirmed by the fact that that document is - indirectly - referred to as "Document 9" in paragraphs 5-7 of the patent in suit (E1 is the European application stemming from Document 9 as clear from the WO number indicated in

field (87) on page 1 of E1), which is directed to the presentation of the relevant state of the art.

For those reasons, appellant 1's argument according to which E1 was not a suitable closest prior art did not convince.

2.1.5 In view of the above, E1 and more specifically its example 1 (in view of the analysis detailed above regarding novelty), constitutes the closest prior art.

2.2 The distinguishing features

Considering the analysis provided in section 1.4 above, the subject-matter of operative claim 1 differs from the composition of example 1 of E1 in that it comprises

- a cyclic amidine compound (B-1) having a melting point lower than 23°C and of formula (2);
- a lower amount of an organotin compound (B-2) (which can even be zero).

2.3 Technical problem effectively solved

2.3.1 Appellant 1 argued that example 1 and comparative example 1 of the patent in suit showed that the technical problem solved by the subject-matter being claimed resided in the provision of a curable composition comprising a reactive silyl group-containing organic polymer component which allows slight bleedout of a liquid compound to occur to the cured product surface and shows good adhesiveness and water-resistant adhesiveness using an amine compound as a non-organotin catalyst.

2.3.2 Examples 1-6 of the patent in suit show that the problem identified above is indeed solved when using

1 part of three different components (B-1), including DBU, for 100 parts of a polyoxypropylene polymer (A).

2.3.3 However, it was neither shown nor even argued by appellant 1 that any problem of bleedout effectively occurs when working according to the teaching of example 1 of E1 (which represents the closest prior art).

In addition, there is even no evidence on file that the problem of bleedout occurs when working according to the teaching of example 1 of E1 but using a different catalyst, in particular DBU and similar amine compounds as mentioned in paragraph 7 of the patent in suit. In that respect, it is noted that appellant 2's argument according to which example 1 of E1 was carried out using a molar ratio (c1)/(c2) of 0.47 (see appellant 2's letter of 13 December 2017: page 7, last row, right column) was not disputed by appellant 1. Therefore, comparative example 1 of the patent in suit, which is the only example provided by appellant 1 which was carried out using a mixture of compounds (C-1) and (C-2), whereby an amount (c1)/(c2) of 6.6 was used (Table 1 of the patent in suit, last row), does not illustrate the teaching of the closest prior art in respect of the amounts of adhesion promoters (C-1) and (C-2) and even deviate from the teaching of E1 in that respect. It was further not disputed by appellant 1 that all the other comparative examples on file, either in the patent in suit or in E12, were not carried out using a mixture of adhesion promoters (C-1) and (C-2) according to example 1 of E1.

In view of the above, the effect of bleedout cannot be considered in the definition of the problem effectively

solved over the closest prior art.

2.3.4 Besides, according to EPO case law, the problem should be formulated in such a way that it contains no pointer to the solution (Case Law, *supra*, I.D.4.3.1). In the present case, the use of an amine compound and/or the absence of an organotin compound (B-2) are both part of the solution and can, therefore, not belong to the formulation of the problem to be solved. However, it is derivable from the patent in suit (paragraphs 4, 108, 109 and 112) and the arguments provided by the parties that those features were related to the aim set in the patent in suit to provide compositions which are less toxic to the environment.

2.3.5 In view of the above, the technical problem effectively solved resides in the provision of a curable composition comprising a reactive silyl group-containing organic polymer component which shows good adhesiveness and water-resistant adhesiveness and which is less toxic to the environment.

2.4 Obviousness

2.4.1 The question is to be answered whether the skilled person desiring to solve the above identified problem would, in view of the prior art, have modified the disclosure of the closest prior art in such a way as to arrive at the claimed subject matter.

2.4.2 In that respect, the skilled person aiming at providing a less toxic composition than that of example 1 of E1 would obviously replace any toxic component thereof by a less toxic one. In particular, the skilled person would replace stannous octylate, which is known to be a toxic organotin catalyst (see paragraph 4 of the patent

in suit regarding development in "recent years" at the time of filing). When looking for an alternative, E1 itself teaches the use of various amine compounds in paragraph 49, including DBU, which is a compound fulfilling all the requirements of component (B-1) of operative claim 1. In said paragraph 49, it is further explicitly indicated that all the compounds listed therein may be used either alone or in combination. Therefore, the skilled person aiming at solving the problem identified above would replace stannous octylate by any of the alternative, non toxic catalysts taught as alternative in E1, including DBU.

2.4.3 E11 is further related to alkoxysilane-terminated polymer blends which are storage-stable at room temperature and can be handled without problems and yet, when required, can be activated at any time by the addition of a suitable catalyst to form highly reactive compositions (page 6, lines 11-15; examples 1-5). The compositions are usable e.g. as adhesives and sealants (claim 14). E11 further teaches that amine catalysts may be used alone for such reactive polymers, and in particular constitute valuable alternatives to the toxic organotin catalysts known in the art (claims 1 and 11; paragraph bridging pages 3 and 4; page 14, line 30 to page 16, line 9). In that respect, it is derivable from E11 (Table 1 and paragraph bridging pages 21 and 22) that DBU is the most efficient silanol containing catalyst taught therein. In view of the above, it would also be obvious to solve the above identified problem by replacing the mixed catalyst system used in example 1 of E1 (containing a toxic component) by DBU (not containing said toxic component) according to the teaching of E11.

Appellant 1 argued that the teaching of E11 could not

be combined with that of example 1 of E1 because E11 was directed to very specific polymers which were not used in example 1 of E1. In that respect, it was not disputed that E11 is directed to polymers comprising alkoxysilane endgroups (see claim 1), which are known to be particularly reactive, whereas the polymers used in example 1 of E1 have, according to appellant 1, methyldimethoxysilyl end groups. However, the teaching of E11 remains that, among the amine catalysts used in its examples, DBU is a particularly efficient silanol condensation catalyst as compared to other amine catalysts, such as e.g. cyclohexylamine or dibutylamine. Considering that the latter compounds are comprised in the list of alternative amine catalysts taught in paragraph 49 of E1, the skilled person would, following the teaching of E11, be guided towards the use of DBU among the amine compounds mentioned in said paragraph 49, also for less reactive polymers containing silicon curable groups.

2.4.4 Appellant 1 argued that a catalyst system being very specific to the polymers it is used with, the skilled person would not modify it.

However, that argument is not in line with the teaching of E1 itself, which discloses various alternative catalysts and combinations thereof in paragraph 49. Although example 1 of E1 is carried out with the most preferred catalyst system taught in paragraph 49 of E1, the skilled person aiming at solving the technical problem identified above would not find any hint in E1 that said catalyst system shall not be modified. Although it may be expected that some drawback may be related to the modification made, the skilled person would not be deterred from doing it if he may expect some advantages in other properties, in the present

case in particular in respect of a reduced toxicity. Therefore, appellant 1's argument is not persuasive.

2.4.5 For those reasons the subject-matter of operative claim 1 is not inventive in the light of example 1 of E1 in view of the teaching of E1 either alone or in combination with that of E11.

First auxiliary request - Admittance

3. Admittance

3.1 Appellants 2 and 3 requested that the first auxiliary request not be admitted into the proceedings.

3.2 The first auxiliary request was filed at a very late stage of the proceedings, namely during the oral proceedings before the Board. Therefore, it represents an amendment to a party's case pursuant to Article 13(1) RPBA and its admittance into the proceedings is in particular subject to the Board's discretion (Article 13(1) RPBA).

3.3 The subject-matter of operative claim 1 differs from that of claim 1 of the main request in that feature (A) was limited to polymers comprising a trimethoxysilyl group.

3.4 It was not shown that any new objection or line of argumentation was submitted by appellants 2 and 3 as compared either to the opposition proceedings and/or their written submissions in appeal. It was also not shown that the case developed in an unexpected manner during the oral proceedings before the Board. Under those circumstances, appellant 1 was well aware of the other parties' objections against the main request

already when filing its reply to the statement of grounds of appeal, but has decided to wait until the day of the oral proceedings to submit the now pending first auxiliary request, which is contrary to the stipulations of Article 12(1)b) and 12(2) RPBA according to which a party should present its complete case in its reply to the other party(ies)'s statement of grounds of appeal.

In addition, considering that the amendment made in feature (A) was already made in some other auxiliary requests filed earlier in the proceedings (see e.g. operative auxiliary requests 9 to 11) and some arguments in support of the patentability (in particular in respect of the inventive step) of that subject-matter was put forward in appellant 1's statement of grounds of appeal (section 7), it makes no doubt that appellant 1 could and should have submitted such a request earlier in the proceedings if it was desired to defend the patent in that form. Also, for the same reason, appellant 1's argument according to which they could not have foreseen which of the numerous objections put forward by appellants 2 and 3 would succeed, does not convince, since they effectively did address the precise objection of lack of inventiveness retained against the main request already when they filed their statement of grounds of appeal.

Therefore, in the circumstances of the present case, there is no reason justifying the filing of that request at such a late stage. Moreover, it runs against the need of procedural economy to file at such a late stage a new request which includes amendments already filed in previous requests, but in a new combination.

3.5 In view of the above, the Board finds it appropriate to exercise its discretion by not admitting into the proceedings the first auxiliary request (Article 13(1) RPBA).

Second auxiliary request

4. Admittance

4.1 Appellants 2 and 3 requested that the second auxiliary request not be admitted into the proceedings.

4.2 The second auxiliary request was filed after oral proceedings were arranged. Therefore, it represents an amendment to a party's case pursuant to Article 13(1) RPBA and its admittance into the proceedings is in particular subject to the Board's discretion (Article 13(1) RPBA).

4.3 Considering that appellant 1 explicitly acknowledged that he had no additional argument in respect of the inventive step as compared to the main request, the same conclusion as for the main request is bound to be reached also for that request. Therefore, in view of procedural economy, there is no need for the Board to admit that request.

4.4 For that reason, the Board finds it appropriate to exercise its discretion by not admitting into the proceedings the second auxiliary request (Article 13(1) RPBA).

Third to fifth auxiliary requests - Inventive step

5. Claim 1 of each of the third to the fifth auxiliary requests differs from claim 1 of the main request at

least in the fact that in respect of the silanol condensation catalyst (B) a feature directed to an amount of 0.5 to 10 pbw per 100 pbw of the organic polymer (A) was added. Whereas this is the sole amendment made to claim 1 of the third auxiliary request as compared to the main request, claim 1 of each of the fourth and the fifth auxiliary requests contained further amendments related to features (B-2) to (B-4).

5.1 In that respect, the additional arguments in respect of inventive step put forward by appellant 1 were only directed to the above indicated amendment made in respect of feature (B), thereby agreeing that the different formulation of the features (B-2) to (B-4) had no impact on the analysis of inventive step. Therefore, it is only needed to assess whether the amendment made in feature (B), taken in combination with the remaining features of the claim, can confer an inventive step.

5.2 However, the range of amounts which was inserted now in operative claim 1 encompasses the amount of silanol condensation catalyst used in example 1 of E1. In addition, appellant 1 has neither shown, nor argued that the amount of silanol catalyst now specified in claim 1 was related to any effect. Also, said amount appears to be usual in the art (see E1: page 9, line 5; E11: page 15, line 22). Under those circumstances, the amendment made in claim 1 constitutes an arbitrary choice which amounts to a mere routine measure and which was not shown to contribute to an inventive step.

5.3 Therefore, following the same line of argumentation as for the main request, the subject-matter of claim 1 of each of the third to the fifth auxiliary requests is

not inventive.

Sixth and eighth auxiliary requests - Admittance

6. Appellants 2 and 3 requested that the sixth and the eighth auxiliary requests not be admitted into the proceedings.

6.1 The sixth and the eighth auxiliary requests were filed by appellant 1 with letter of 18 November 2015, i.e. at a later stage than their reply to appellants 2 and 3's statement of grounds of appeal (which was constituted by appellant 1's letter of 2 April 2015). Therefore, those requests represent an amendment to a party's case pursuant to Article 13(1) RPBA and their admittance into the proceedings is subject to the Board's discretion (Article 13(1) RPBA).

6.2 Considering that appellant 1 explicitly acknowledged that he had no additional argument in respect of the inventive step as compared to the third to the fifth auxiliary requests, the same conclusion is bound to be reached. Therefore, in view of procedural economy, there is no need for the Board to admit any of those requests.

6.3 For that reason, the Board finds it appropriate to exercise its discretion by not admitting into the proceedings the sixth and the eighth auxiliary requests (Article 13(1) RPBA).

Seventh auxiliary request

7. Admittance

7.1 It was not disputed by the parties that the seventh auxiliary request is identical to the fourth auxiliary request filed with appellant 1's statement of grounds of appeal. Therefore, that request was submitted pursuant to Article 12(1) and (2) RPBA and can only be held inadmissible pursuant to Article 12(4) RPBA.

7.2 However, no argument was put forward in that respect by appellants 2 and 3, the only objection being that because of the various renumbering done in the course of the proceedings, it was unclear at which stage said request was first presented. Considering that it was made clear, at least during the oral proceedings before the Board, that the seventh auxiliary request was first submitted as auxiliary request 4 with appellant 1's statement of grounds of appeal, appellants 2 and 3's objection is rejected.

7.3 Therefore, there is no reason for the Board not to admit the seventh auxiliary request into the proceedings pursuant to Article 12(4) RPBA.

8. Inventive step

8.1 Considering that appellant 1 explicitly acknowledged that he had no additional argument in respect of the inventive step as compared to the third to the fifth auxiliary requests, the same conclusion is bound to be reached.

8.2 Therefore, the subject-matter of the seventh auxiliary request is not inventive for the same reason as for the third to the fifth auxiliary requests.

Ninth to eleventh auxiliary requests

9. Admittance

9.1 The ninth to the eleventh auxiliary requests were not filed with the first reply of appellant 1 to appellants 2 and 3 statement of grounds of appeal (letter of 2 April 2015), but they were only filed about 6 months later (letter of 18 November 2015). Consequently, their admittance into the proceedings is subject to the Board's discretion (Article 13(1) RPBA).

9.2 It was not disputed during the oral proceedings before the Board that the ninth to the eleventh auxiliary requests corresponded to the fifth to the seventh auxiliary requests submitted together with appellant 1's statement of grounds of appeal, whereby the sole amendment made was that the term "substantially absent" was replaced by "absent" in respect of each of features (B-2) to (B-4).

Considering that the term "substantially absent" had been objected to by appellants 2 and 3 in their reply to appellant 1's statement of grounds of appeal as lacking clarity (see appellant 2's letter of 26 February 2015: section C.5 and appellant 3's letter of 25 March 2015: section V), it makes no doubt for the Board that the amendment made by appellant 1 in each of the ninth to the eleventh auxiliary requests could and should have been expected by appellants 2 and 3.

9.3 Besides, although the ninth to the eleventh auxiliary requests were not filed with the first reply of appellant 1 to appellants 2 and 3 statement of grounds of appeal (see above section 9.1), they were filed early enough in the proceedings to allow appellants 2 and 3 to take them into account, in particular considering that the amendment made was not complicated to understand.

9.4 For those reasons, the Board finds it appropriate to exercise its discretion by admitting into the proceedings the ninth to the eleventh auxiliary requests (Article 13(1) RPBA).

10. Inventive step

10.1 Ninth auxiliary request

10.1.1 Similarly to the third auxiliary request the sole amendments as compared to the main request which were argued by appellant 1 to contribute to the inventive step were:

(a) the limitation of feature (A) to organic polymers having a trimethoxy silyl group;

(b) in respect of the silanol condensation catalyst (B) a feature directed to an amount of 0.5 to 10 pbw per 100 pbw of the organic polymer (A) was added.

It was already explained in respect of the third auxiliary request that amendment (b) was not shown to confer an inventive step.

Regarding amendment (a), it was not disputed by appellants 2 and 3 that the organic polymer used in

example 1 of E1 did not carry a trimethoxy silyl group but a methyldimethoxysilyl group, so that amendment (a) results in a further distinguishing feature with respect to example 1 of E1.

It is derivable from E11 (paragraph bridging pages 3 and 4; page 14, line 30 to page 16, line 9) that polymers carrying trimethoxy silyl group are particularly reactive when used with amine silanol condensation catalysts. In particular, E11 teaches that such polymers may be efficiently crosslinked in the absence of organotin catalyst and using an amine catalyst such as DBU (page 3, line 30 to page 4, line 5; examples and Table 1). The same teaching is derivable from E5 (paragraph 16, lines 1-6). While in view of this the technical problem is to be reformulated by specifying in addition that a composition which may be more efficiently crosslinked is desired, the solution is obvious in view of exactly this teaching of E11 and E5.

In addition, it is derivable from page 5, lines 5-7 of E1 that polymers carrying trimethoxysilyl group were encompassed by the teaching of E1 and taught therein as an equivalent alternative to polymers carrying a methyldimethoxysilyl group as used in example 1 of E1.

Therefore, following the same reasoning as for the third auxiliary request and the additional reasoning regarding the specific polymers, it was obvious to provide a more efficient and less toxic composition than that of example 1 of E1 by using DBU as catalyst (paragraph 49 of E1; Table 1 and examples of E11) and a polyoxyalkylene polymer having a trimethoxy silyl group (paragraph 22 of E1; claim 1 and examples of E11).

For that reason, the subject-matter of claim 1 of the ninth auxiliary request is not inventive.

10.2 Tenth auxiliary request

10.2.1 Claim 1 of the tenth auxiliary request only differs from claim 1 of the ninth auxiliary request in that the amendment of feature (B) related to the amount was further limited to 1 to 5 pbw.

10.2.2 However, as for the third auxiliary request, it was not shown by appellant 1 that said amount was related to any effect. That amount is further very similar, if not identical, to that used in example 1 of E1 and/or generally used in the art (E1: paragraph 49; E11: page 15, line 22). Therefore, said amendment was not shown to contribute to an inventive step.

10.2.3 For that reason, the subject-matter of claim 1 of the tenth auxiliary request is not inventive.

10.3 Eleventh auxiliary request

10.3.1 Claim 1 of the eleventh auxiliary request only differs from claim 1 of the tenth auxiliary request in that the composition being claimed should comprise an additional component (D), namely a polymer plasticiser, which is a polyether.

10.3.2 However, also in that respect, it was not shown by appellant 1 that said feature was related to any effect. Besides, such compound is known in the art and even disclosed as a preferred component in E1 (page 9, lines 24-41, in particular lines 33-35) . Therefore, said amendment was not shown to contribute to an

inventive step.

10.3.3 For that reason, the subject-matter of claim 1 of the eleventh auxiliary request is not inventive.

11. Since none of appellant 1's requests which are in the proceedings (main request; third to fifth, seventh and ninth to eleventh auxiliary requests) is allowable, there is no need to deal with any other issue and the patent is to be revoked.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. European patent No. 1 939 256 is revoked.

The Registrar: The Chairman:

B. ter Heijden D. Semino

Decision electronically authenticated