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Datasheet for the decision
of 28 April 2006

Case Number: T 0701/03 - 3.3.03

Application Number: 97112432.6

Publication Number: 0822233

IPC: C08L 83/07

Language of the proceedings: EN

Title of invention:
Crosslinkable silicone compound, stable under storage conditions

Patent Proprietor:
ZHERMACK S.p.A

Opponents:
01: Heraeus Kulzer GmbH
02: 3M ESPE AG

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 114(2)

Keyword:
"Late submitted material - document admitted (no)"
"Novelty (yes)"
"Inventive step (yes) - problem and solution"

Decisions cited:
G 0002/88, G 0010/91, T 1002/92, T 0793/93

Catchword:
-

Case Number: T 0701/03 - 3.3.03

DECISION
of the Technical Board of Appeal 3.3.03
of 28 April 2006

Appellant: (Patent Proprietor)	ZHERMACK S.p.A. Via Bovazecchino, 100 I-45021 Badia Polesine (Prov. Rovigo) (IT)
Representative:	Modiano, Micaela Nadia Dr. Modiano & Associati S.p.A. Via Meravigli 16 I-20123 Milano (IT)
Respondent: (Opponent 01)	Heraeus Kulzer GmbH Heraeusstrasse 12-14 D-63450 Hanau (DE)
Representative:	-
(Opponent 02)	3M ESPE AG Espe Platz D-82229 Seefeld (DE)
Representative:	Fiesser, Gerold Michael Patentanwälte Kahlhöfer Neumann Herzog Fiesser Postfach 26 02 32 D-80059 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office of 7 April 2003 posted on 24 April 2003 revoking European patent No. 0822233 pursuant to Article 102(1) EPC.**

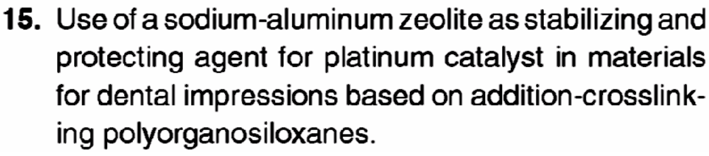
Composition of the Board:

Chairman:	R. Young
Members:	A. Däweritz E. Dufrasne

Summary of Facts and Submissions

I. The grant of European patent No. 0 822 233 in respect of European patent application No. 97 112 432.6, filed on 21 July 1997 and claiming priority of 30 July 1996 of an earlier application in Italy (PD960194), was announced on 31 January 2001 (Bulletin 2001/05). The patent was granted with 16 claims, Claims 1, 6, 7, 9, 12 and 15 of which read as follows:

> **1.** A crosslinkable silicone compound, consisting essentially of a crosslinkable polyorganosiloxane, a crosslinking agent containing silicon-hydrogen groups, a platinum catalyst and a stabilizing agent for the platinum catalyst, characterized in that said stabilizing agent is a sodium-aluminum zeolite.
>
> **6.** A silicone compound according to claim 1, characterized in that it is provided in the form of two components.
>
> **7.** A compound according to claim 6, characterized in that:
>
> a first one of said two components consists essentially of:
>
> -- a crosslinkable polyorganosiloxane,
> -- a crosslinking agent containing silicon-hydrogen groups,
>
> and a second one consists essentially of:
>
> -- a crosslinkable polyorganosiloxane
> -- a platinum catalyst
> -- a sodium-aluminum zeolite.
>
> **9.** A silicone compound according to claim 1, characterized in that it further comprises additives selected from the group consisting of inhibitors, fillers, release agents, colors, additives to modify the rheological characteristics and mixture thereof.
>
> **12.** A compound according to claim 9, characterized in that said release agents are paraffin mineral oils.



15. Use of a sodium-aluminum zeolite as stabilizing and protecting agent for platinum catalyst in materials for dental impressions based on addition-crosslinking polyorganosiloxanes.

The remaining dependent Claims 2 to 5, 8, 10, 11, 13, 14 and 16 related to elaborations of the subject-matter of the preceding Claims 1, 6, 9 and 15, respectively.

Reference numbers in brackets, such as [0001], will be used to refer to individual paragraphs as numbered in the specification of the patent in suit.

II. On 26 and 29 October 2001, respectively, two Notices of Opposition were filed in which revocation of the patent in its entirety was requested.

(1) Both opponents raised objections on the grounds of Article 100(a) EPC, namely lack of novelty and lack of inventive step (Articles 54 and 56 EPC). Opponent 01 (O-01) additionally referred to Article 100(b) EPC, because, in its opinion the patent in suit did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. Apart from documents filed by O-01 to demonstrate an asserted public prior use, the Opponents relied *inter alia* on the following documents (as numbered in the decision under appeal) in order to support their objections under Articles 54 and 56 EPC:

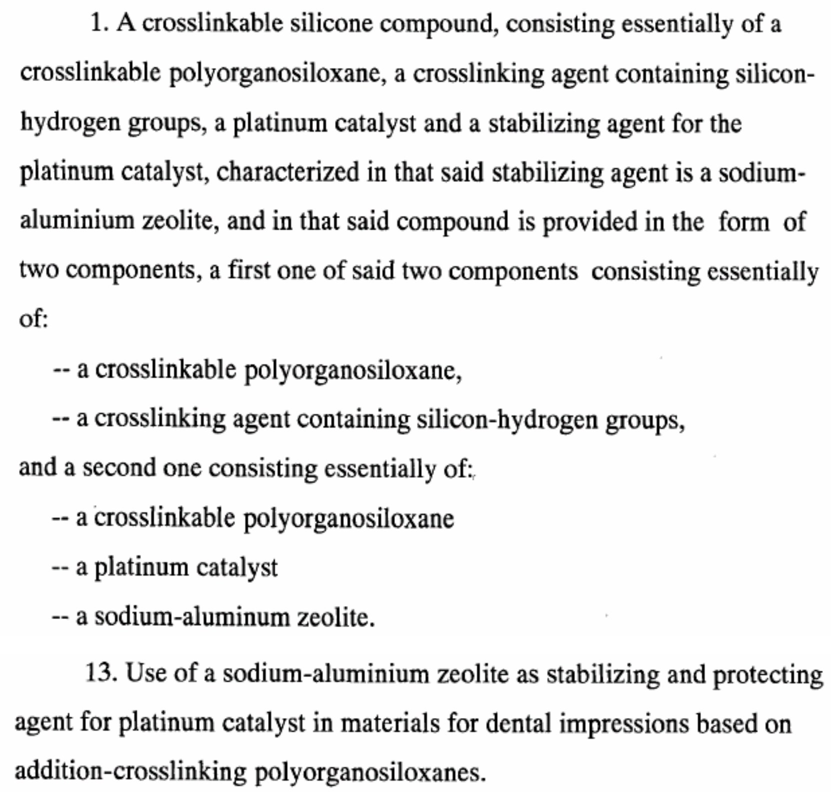
D1: EP-A-0 231 420,
D1a: "Fluka Analytika 1995/96", Fluka Chemie AG, Buchs (CH), 1995, pages 1064/1065,
D2: EP-A-0 596 677,
D3: EP-A-0 046 907,

D4: WO-A-93/04659,

D5: US-A-4 035 453 and

D6: Römpp Chemie Lexikon, 9th edition, Thieme Verlag, Stuttgart 1991, pages 2829/2830, "Molekularsiebe".

(2) In reply to the oppositions, the Patent Proprietor disputed, in a letter dated 19 June 2002, the arguments presented by the opponents on the basis of a new amended set of claims comprising Claims 1 to 14, filed therewith, the independent claims of which read as follows:



> 1. A crosslinkable silicone compound, consisting essentially of a crosslinkable polyorganosiloxane, a crosslinking agent containing silicon-hydrogen groups, a platinum catalyst and a stabilizing agent for the platinum catalyst, characterized in that said stabilizing agent is a sodium-aluminium zeolite, and in that said compound is provided in the form of two components, a first one of said two components consisting essentially of:
>
> -- a crosslinkable polyorganosiloxane,
> -- a crosslinking agent containing silicon-hydrogen groups,
>
> and a second one consisting essentially of:
>
> -- a crosslinkable polyorganosiloxane
> -- a platinum catalyst
> -- a sodium-aluminum zeolite.
>
> 13. Use of a sodium-aluminium zeolite as stabilizing and protecting agent for platinum catalyst in materials for dental impressions based on addition-crosslinking polyorganosiloxanes.

This resulted in the deletion of previous Claims 6 and 7 of the granted version (see section I, above), in the renumbering and consequential necessary amendment of the subsequent claims caused by the above deletions. On this occasion, the renumbered Claim 10 (previous Claim 12) was made appendant to Claim 1.

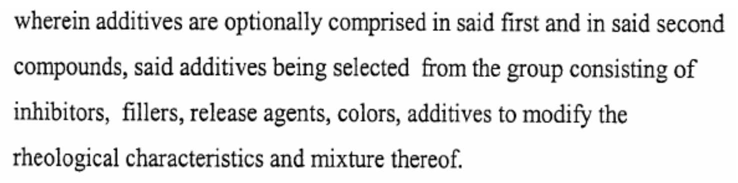
(3) Silicone compositions of the claimed type are often referred to as "RTV" (room temperature vulcanisation) silicones usually marketed in two separate mixes called "base" and "catalyst", which must be mixed uniformly before use. These terms will also be used herein below, whereby the first component as defined in Claim 1 will be addressed as the "base", and the second component will be referred to as the "catalyst" (cf. [0009], [0031] and [0032]).

(4) In a communication dated 28 October 2002, annexed to the summons to oral proceedings, the Opposition Division gave its preliminary, provisional opinion indicating that novelty of the composition appeared to be given with respect to the cited prior art documents. Nor did any one of these documents seem to deal with the problem of stabilising a platinum (Pt) catalyst in RTV silicone materials for dental impressions. This problem was considered as having been solved by the claimed subject-matter. As regards the asserted prior use, it was found that the documents filed to this end did not disclose a composition wherein the Pt catalyst and a sodium aluminium zeolite ("Na-Al zeolite") were comprised in the same part of the composition.

(5) On 7 April 2003, the oral proceedings were held before the Opposition Division. In these proceedings, the above set of claims was refiled as the Main Request (thereby correcting the renumbered Claim 10 by making it appendant to renumbered Claim 7, which corresponded to Claim 9 as granted; section I, above), and two further sets of claims were submitted as First and Second Auxiliary Requests.

(6) Claim 1 of both Auxiliary Requests had been amended by deletion of the word "essentially" at each occurrence of the formulation "consisting essentially of" in Claim 1 of the Main Request (as shown in this section, above).

Furthermore, in Claim 1 of the First Auxiliary Request the following clause had been added to the end of the claim:



> wherein additives are optionally comprised in said first and in said second compounds, said additives being selected from the group consisting of inhibitors, fillers, release agents, colors, additives to modify the rheological characteristics and mixture thereof.

Hence, Claim 7 of the Main Request (section II(5), above) was deleted from the First Auxiliary Request and the subsequent claims were renumbered and adapted accordingly.

III. In the decision announced at the end of the oral proceedings, the patent in suit was revoked.

(1) In particular, it was found "that the skilled person reading the specification of the patent in suit is able to carry out the invention availing himself of common general knowledge. The requirements of Art. 83 EPC are therefore fulfilled." (No. 2 of the reasons).

(2) Furthermore, the decision under appeal held that "examples 1 and 3 of D3 disclose all features of the first and second component of claim 1 of the main request. Therefore the subject-matter of said claim is not novel" (No. 3.2 of the reasons, last paragraph).

(3) Moreover, it was found that the First Auxiliary Request did not comply with Article 123(2) EPC.

(4) Claim 1 of the Second Auxiliary Request was, however, held novel, because none of the cited documents disclosed a composition consisting of two components, the first of which (the "base") consisted of the cross-linkable polyorganosiloxane and a cross-linking agent containing Si-H groups and the second of which (the "catalyst") consisted of a cross-linkable polyorganosiloxane, a Pt catalyst and a Na-Al zeolite.

Nor did any one of those documents make available to the public the stabilising effect of a Na-Al zeolite on a Pt (platinum) catalyst in materials for dental impressions based on RTV silicones.

(5) In particular, the composition of Claim 1 according to this auxiliary request differed from the composition of Example 3 of D3 (ie its "base" as defined in Example 1 and its "catalyst" as described in Example 3 of D3) in that its two components did not contain any fillers and coloured pigments, nor did the "catalyst" contain metallic palladium (Pd).

(6) The Opposition Division expressed doubts, however, as to whether these differences were suitable to cause any technical effect in comparison with the above composition known from Example 3 of D3. In particular, these doubts were held valid with regard to the problem of providing RTV silicone compositions for impression materials in dentistry which were stable under storage conditions ([0001] and [0002]), because this problem would have already been solved by D3 (D3: page 1,

lines 1 to 3; page 3, line 25 to page 4, line 5). It was considered clear from these passages of D3 that this document had provided storage stable vinyl silicone pastes which were used for producing accurate impressions of teeth. Moreover, it had not, according to the decision under appeal, been demonstrated by the Patent Proprietor that the claimed compositions would be suitable for the intended purpose despite the absence of those additives, which had been indicated in [0003] and [0008] as being normally used in silicone rubbers, but were now excluded from Claim 1 of this request. Nor had it been demonstrated that compositions containing only zeolite free of metallic Pd would "have a comparable or even better stabilising effect on the palladium catalyst" [*sic*]. Furthermore, all examples in the specification contained an inhibitor and, consequently, did not fall within the scope of Claim 1 under consideration (Nos. 6.3.1 and 6.3.2 of the reasons).

(7) Since no technical results (or effects) in comparison with the closest state of the art, D3, had been shown for the compositions of this claim, it was held that there was no inventive step.

(8) At the end of the oral proceedings, after the decision had been given, the Patent Proprietor had declared its wish to file a third auxiliary request which had been stapled to the bundle of the above Main, First and Second Auxiliary Requests. Since it had not, however, been presented to the Opposition Division and the other parties before the decision was given, it was not admitted any more into the proceedings (decision

under appeal: No. 7 of the reasons; minutes of the oral proceedings, page 4).

IV. On 23 June 2003, a Notice of Appeal was filed by the Patent Proprietor/Appellant against this decision. The prescribed fee was paid on the same date. The Statement of Grounds of Appeal was received on 4 September 2003.

(1) In order initially to clarify the order of events in the further proceedings and to identify the version of claims on which this decision is based, a short review of the various requests filed by the Appellant in the course of these appeal proceedings will be given directly hereinafter. It should be noted that the replacement of the word "aluminum" by "aluminium" or *vice versa* in the claims of a given request has not, for the purpose and in the context of this review, been considered as being an amendment of the request.

(a) Thus, in the Statement of Grounds of Appeal, the Appellant, at first, requested that the decision under appeal be found null and void for not complying with Rule 68(2) EPC, because not all independent claims of different category of a request had formally been rejected in the decision under appeal. The Appellant was, furthermore, of the opinion that, with regard to the "Third Auxiliary Request" (section III(8), above), it had been deprived of its right to be heard (Article 113(1) EPC) and, therefore, it requested that the appeal fee be reimbursed (Rule 67 EPC).

(b) In the same submission, the Appellant furthermore disputed the reasons for the decision under appeal, replaced the previous two Auxiliary Requests dealt with in the decision under appeal by five new Auxiliary Requests, and filed copies of these new Auxiliary Requests together with a new copy of the Main Request, which was identical to the version as filed with the letter dated 19 June 2002 (see section II(2), above).

(c) In a further letter dated 12 July 2004, seven sets of claims were filed, (i) the first of which related to the Main Request, unamended, (ii) one new set of claims as the first Auxiliary Request and (iii) the further five sets of claims corresponding to the previous Auxiliary Requests, renumbered as second to sixth Auxiliary Requests.

(d) Enclosed to a still further letter dated 28 March 2006, new copies of the unamended Main Request and of a total of eight Auxiliary Requests were filed. Apart from new third, fourth and sixth Auxiliary Requests, the further auxiliary requests corresponded to the five auxiliary requests as in section IV(1)(b), above, though in different order.

(e) Finally, with yet another letter dated 30 March 2006, the Appellant replaced the third and sixth Auxiliary Requests as mentioned in the previous paragraph by new "THIRD BIS" and "SIXTH BIS" Auxiliary Requests, respectively. In fact, new copies of altogether nine sets of claims were submitted with this letter. The other requests, corresponding to those mentioned in the previous paragraph, were refiled in unamended form.

(f) Moreover, the following statements were made in this latest letter by the Appellant:

- (i) The requests mentioned in section IV(1)(a), above, were withdrawn.
- (ii) The first Auxiliary Request, as referred to in section IV(1)(c), above, was withdrawn.

(g) In summary, the latest version of the Main Request, as submitted with the letter dated 30 March 2006, differed from its version, as submitted by letter of 19 June 2002 (section II(2), above) and as refiled with the Statement of Grounds of Appeal, only in that, in line 5 of Claim 1, the word "aluminium" had been amended to "aluminum", and that Claim 10 was appendant to Claim 7, both as renumbered (cf. the granted versions of these claims, ie Claims 12 and 9, section I, above). Hence, the Main Request read as follows:

1. A crosslinkable silicone compound, consisting essentially of a crosslinkable polyorganosiloxane, a crosslinking agent containing silicon-hydrogen groups, a platinum catalyst and a stabilizing agent for the platinum catalyst, characterized in that said stabilizing agent is a sodium-alumin~~i~~um zeolite, and in that said compound is provided in the form of two components, a first one of said two components consisting essentially of:

-- a crosslinkable polyorganosiloxane,

-- a crosslinking agent containing silicon-hydrogen groups,

and a second one consisting essentially of:

-- a crosslinkable polyorganosiloxane

-- a platinum catalyst

-- a sodium-aluminum zeolite.

2. A silicone compound according to claim 1, characterized in that said polyorganosiloxane has at least one or more vinyl groups in the end part of the linear molecule.

3. A silicone compound according to claim 1, characterized in that said agent crosslinking agent containing silicon-hydrogen groups is a polyhydrogen organosiloxane.

4. A silicone compound according to claim 1, characterized in that the ratio between said zeolite and said platinum catalyst is between 1:0.01 and 1:0.003.

5. A silicone compound according to claim 1, characterized in that said zeolite has an average formula Na12(AlO2)12(SiO2)12.27H2O.

6. A silicone compound according to claim 1, characterized in that it vulcanizes at room temperature with a setting cycle lasting a minimum of one minute up to a maximum of ten minutes from when mixing of the two components begins.

7. A silicone compound according to claim 1, characterized in that it further comprises additives selected from the group consisting of inhibitors, fillers, release agents, colors, additives to modify the rheological characteristics and mixture thereof.

8. A compound according to claim 7, characterized in that said inhibitors are methyl vinyl cyclotetrasiloxanes.

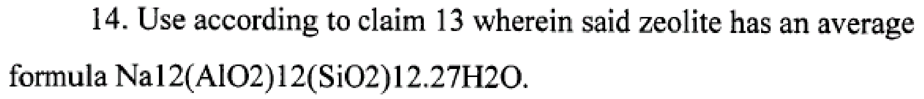
9. A compound according to claim 7, characterized in that said fillers are selected from the group consisting of quartz, calcium carbonate, silica, talc and mixtures thereof.

10. A compound according to claim 7, characterized in that said release agents are paraffin mineral oils.

11. A compound according to claim 7, characterized in that said rheological modifiers are selected from the group consisting of microfine quartz, fumed silica, and mixtures thereof.

12. A compound according to claim 7, characterized in that said colors are food-compatible colors.

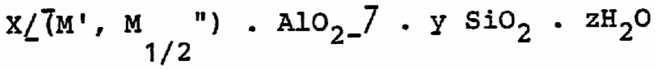
13. Use of a sodium-aluminium zeolite as stabilizing and protecting agent for platinum catalyst in materials for dental impressions based on addition-crosslinking polyorganosiloxanes.



14. Use according to claim 13 wherein said zeolite has an average formula Na12(AlO2)12(SiO2)12.27H2O.

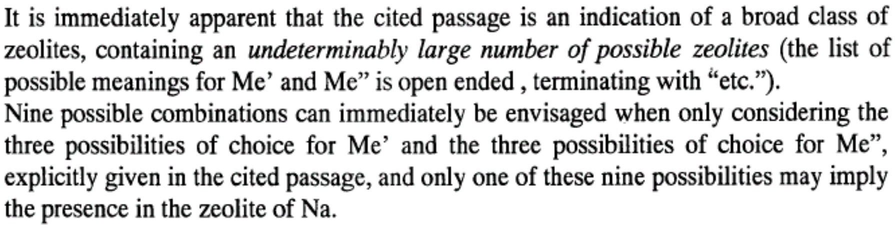
(2) As regards novelty, the Appellant put emphasis, in the Statement of Grounds of Appeal, on the argument that in neither Example 1 nor Example 3 of D3 was a Na-Al zeolite referred to. Instead Example 3 of D3 mentioned "a catalyst paste '*prepared in a kneader by mixing … 1 part of zeolite with a palladium content of 1%.*' (emphasis added)" The Appellant continued: "It should be noted that no indication as to which zeolite is used is made in Example 3 and no univocal interpretation can be made when reading the whole text of D3 as to which is the zeolite used in Example 3" (page 7, lines 1 to 16).

Furthermore, the Appellant referred (page 7, second half, to page 8, last but third paragraph of the Statement of Grounds of Appeal) to the different definitions of zeolites given in the general description of D3. Thus, the zeolites corresponded to the general formula

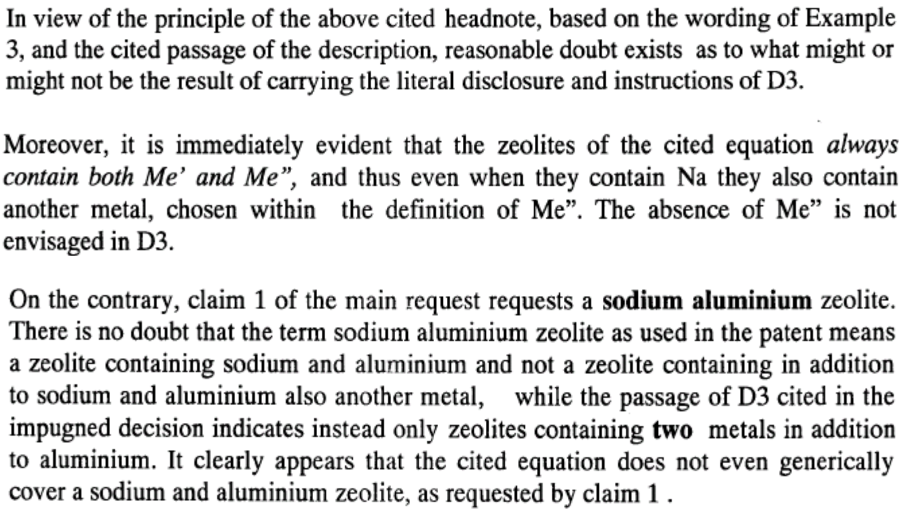


$$x/[(M', M''_{1/2}) \cdot AlO_2] \cdot y\ SiO_2 \cdot zH_2O$$

wherein M' was Li, Na, K etc. and M" was Mg, Ca, Sr etc. and were described, for example, in D. W. Breck, Zeolite Molecular Sieves, John Wiley & Sons, Inc. New York 1974 (D3: page 6, last paragraph and top of page 7). And it was continued by the Appellant:

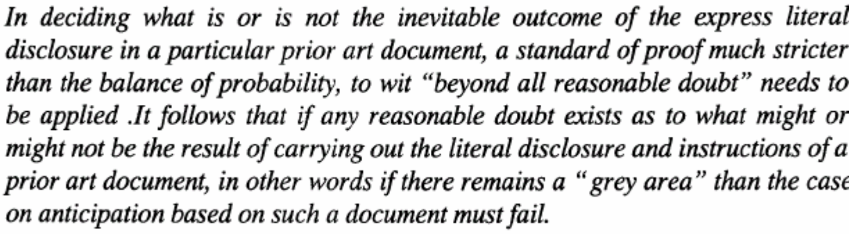


It is immediately apparent that the cited passage is an indication of a broad class of zeolites, containing an *undeterminably large number of possible zeolites* (the list of possible meanings for Me' and Me" is open ended , terminating with "etc.").
Nine possible combinations can immediately be envisaged when only considering the three possibilities of choice for Me' and the three possibilities of choice for Me", explicitly given in the cited passage, and only one of these nine possibilities may imply the presence in the zeolite of Na.



> In view of the principle of the above cited headnote, based on the wording of Example 3, and the cited passage of the description, reasonable doubt exists as to what might or might not be the result of carrying the literal disclosure and instructions of D3.
>
> Moreover, it is immediately evident that the zeolites of the cited equation *always contain both Me' and Me"*, and thus even when they contain Na they also contain another metal, chosen within the definition of Me". The absence of Me" is not envisaged in D3.
>
> On the contrary, claim 1 of the main request requests a **sodium aluminium** zeolite. There is no doubt that the term sodium aluminium zeolite as used in the patent means a zeolite containing sodium and aluminium and not a zeolite containing in addition to sodium and aluminium also another metal, while the passage of D3 cited in the impugned decision indicates instead only zeolites containing **two** metals in addition to aluminium. It clearly appears that the cited equation does not even generically cover a sodium and aluminium zeolite, as requested by claim 1 .

The argument in the second paragraph of the above quotation was based on the Catchword of Decision T 793/93 of 27 September 1995 (not published in OJ EPO), as quoted by the Appellant:



> *In deciding what is or is not the inevitable outcome of the express literal disclosure in a particular prior art document, a standard of proof much stricter than the balance of probability, to wit "beyond all reasonable doubt" needs to be applied .It follows that if any reasonable doubt exists as to what might or might not be the result of carrying out the literal disclosure and instructions of a prior art document, in other words if there remains a "grey area" than the case on anticipation based on such a document must fail.*

(3) As regards inventive step, the Appellant adopted the preliminary, provisional opinion of the Opposition Division in its communication mentioned in section II(4), above, and pointed out that none of the cited documents dealt with the problem of stabilising the Pt catalyst in RTV silicone materials for dental impressions.

(4) Furthermore, the Appellant filed eight pieces of evidence including

X1: "extract from the technical presentation No. 71 "Wessalith for detergents", from Degussa" (cf. [0050]),

X3: "data sheet of SYLOSIV® A3 (W.R. Grace & Co.), a zeolite containing potassium oxide, aluminium oxide and silicon oxide",

X6: an experimental report, and
X8: Kirk-Othmer, Encyclopedia of Chemical Technology, Second Edition, New York, Volume 18, pages 157/158.

V. The arguments of the Appellant were disputed by Respondent 1/O-01 in its letter dated 14 January 2004 and by Respondent 2/O-02 in its letter dated 19 March 2004, respectively.

(1) As regards Claim 1 of the Main Request, requiring the presence of Pt catalyst and zeolite in the same component of the claimed composition, Respondent 1 maintained its novelty objection and supported the finding on this matter in the decision under appeal. With regard to use Claim 13, the Respondent argued that the presence of Na-Al zeolites in compositions for dental impressions had been known from D3. As far as that went, the composition resulting from the claimed use was not new, and the use had been an inherent feature of the known composition. Therefore, the subject-matter of Claim 13 was not new.

(2) With regard to Claim 1 of the Main Request, Respondent 2 was of the same opinion as Respondent 1 and, because of the asserted lack of novelty, refrained from commenting on any further issues concerning this request.

(3) However, with respect to an independent claim in the first Auxiliary Request (section IV(1)(b), above), which differed from Claim 1 of the above Main Request only by the restriction to "zeolite A" (as represented by the formula in Claim 5 of the Main Request;

cf. section IV(1)(g), above), Respondent 2 additionally discussed both the issues of novelty and inventive step.

Since, "zeolite A" was the prevailing zeolite in the market, the skilled person would, besides those other types of zeolites mentioned in D3, read "zeolite A" into the general term of zeolite ("hineinlesen"). In the Respondent's view, D3 also anticipated, therefore, the subject-matter of this independent claim.

Furthermore, the application of the problem-solution approach on this claim would additionally show that the subject-matter of this claim was not inventive either. With regard to the technical problem as identified by the Appellant (provision of a composition having an improved stability in storage conditions; [0021]), the Respondent took the view that it was apparently not solved by the claimed composition vis-à-vis that of D3. Jurisprudence would require that claimed improvements be demonstrated by evidence. However, the comparative data of the Appellant (ie in X6) would not meet this requirement, because they did not compare the claimed subject-matter with those embodiments in the state of the art having the utmost structural similarity with the invention. Instead, a comparison was made only with zeolites far remote from zeolites X and Y explicitly mentioned in the closest state of the art. These two zeolites would have Na as the alkali metal, as shown in

D7: Holleman-Wiberg, "Lehrbuch der anorganischen Chemie", 91st -100th edition, Berlin 1985, pages 777/778.

The comparisons of the Appellant, by contrast, were based on zeolites having K as the alkali metal and were, in view of the jurisprudence, therefore irrelevant. Consequently, the relevant problem could only be the provision of a further composition comprising a zeolite in the catalyst component. The solution of this problem was considered obvious because, as already mentioned above, zeolite A was the prevailing zeolite in the market.

With regard to the use claims, the Respondent argued that it had been known for a long time already that Na containing zeolites could be used for adsorbing noxious substances, in particular water, or for ion exchange. The suitability of the zeolites for ion exchange had already been known eg from D7. Hence, these claims were not based on an inventive step.

VI. In a further letter of 12 July 2004, the Appellant disputed the arguments of the Respondents. It pointed out that neither the patent in suit nor the prior art contained any evidence that a zeolite containing not only Na and Al but also another metal would be known as Na-Al zeolite. Apart from this argument, the Appellant continued that "the skilled person based on the disclosure of D3 would have had to select one zeolite from an undeterminable number of zeolites defined by the formula given in D3, anyway from not less than 9 alternatives based on the six named metals ..." (page 2, third last paragraph). Example 3 of D3, "never mentions which zeolite was used" (loc. cit., last paragraph).

Furthermore, the Appellant contended that there was no indication or suggestion in the prior art of the fact that the known ion exchange activity and particularly the water adsorption activity of the zeolites would lead to improvements of the Pt catalyst stability in materials for dental impression of the kind as claimed when in such a material a Na-Al zeolite was present (last page of the letter).

VII. Besides those letters of the Appellant, as mentioned in section IV(1)(d) and (e), above, a further letter dated 17 March 2005, was received from Respondent 2 who again disputed the arguments of the Appellant.

VIII. By letter dated 27 April 2006 and received on the same date, ie on the last day before the oral proceedings, Respondent 1 submitted a further document,

D8: EP-A-0 577 276,

which was referred to as being highly relevant, in particular with respect to the Auxiliary Requests Three Bis and Six Bis, because of a passage on page 2, lines 19 to 27 and the ratio of the amounts of zeolite/Pt catalyst in Examples 1 to 3.

It was explained that this document had only been found by chance one day before (ie on 25 April 2006) and its significance had only been discovered on 26 April 2006 ("Das Dokument wurde erst am 25.04.06 im Rahmen einer Recherche zufällig ermittelt, und seine Bedeutung ist am 26.04.06 klar geworden.").

IX. On 28 April 2006, oral proceedings were held in the presence of all three parties. Since many arguments had already been submitted in writing, the following references relate only to additional points made by the parties or to particular points stressed again by a party in the oral proceedings.

(1) At the beginning of the oral proceedings, the Board made some remarks concerning the filing of the various versions of claims submitted only after the submission of the Statement of Grounds of Appeal in the course of the further appeal proceedings:

"It should be understood that these requests were not filed in compliance with the Rules of Procedure, which entered in force on the 1 May 2003. According to Article 10a(2) of these Rules, the Statement of Grounds of Appeal and the reply shall contain a party's complete case.

According to Article 10b(1) of the Rules, any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion. The discretion shall be exercised in view of inter alia the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy.

Since the wording of the Main Request has not been modified during the appeal proceedings, the Board will postpone this issue until after the discussion about the Main Request.".

(2) With respect to the submission of D8 one day before the oral proceedings (mentioned in section VIII), the Representatives of the Appellant explained that the submission had been received by them only after their arrival in Munich, to where it had had to be forwarded,

after it had been received in their premises in Italy. Therefore, the Appellant requested that this document not be admitted, because the Representatives had not had enough time to consider its relevancy, or, in the alternative, that the proceedings be postponed and costs be apportioned (Article 104(1) EPC).

In the course of the discussion about this issue, Respondent 1 conceded *expressis verbis* that, for the Main Request of the Appellant, D8 was of no higher relevancy than the previously cited documents.

(3) Concerning the meaning and scope of the term "sodium-aluminium zeolite" in the claims, the parties maintained their controversial positions.

The Respondents interpreted this term as relating to a zeolite *containing* sodium and aluminium as main constituents, as opposed to containing *only* (in the sense of "consisting of") Na and Al cations. Thus, Respondent 1 argued that, when a reference to Pb/Sn-solder was made, the skilled man would understand that lead and tin were main constituents of the solder but not the only components thereof. Furthermore, it was known in the art that synthetic faujasite was a Na-Al zeolite free of further cations. Respondent 2 referred to [0042] to [0045], which, in its view, indicated that ions could be exchanged, and argued that the second formula in D3 (page 8) referred to one metal one of which should be sodium.

By contrast, the Appellant remarked that its arguments, mentioned in section IV(2), above, had not been challenged by the Respondents in any one of the written submissions of the Respondents. It also disputed the remark that synthetic faujasite would always be a Na-Al zeolite free of any other metal ions. Nor could X8 be interpreted to exclude "foreign" cations from the zeolites, in particular not from zeolite Y.

Nor had any argument been presented in written form by the Respondents as to why something else than what was said in the claims should be understood by the term "sodium-aluminium zeolite".

(4) As regards novelty, the Appellant pointed out that nowhere in D3 was a reference made to a Na-Al zeolite, nor was there an individualisation of a specific zeolite to be found. Nor was there any reference in D3 about a stabilisation of the Pt catalyst by means of zeolite.

Respondent 2 argued that whilst in [0017] it was said that nobody knew what happened when the reactivity of the Pt catalyst declined, it was alleged in [0042] without proof that the zeolite would have the primary effect of binding of harmful metal ions. However, the detrimental influence of water on the stabilisation of silicone-based dental impression compositions of the kind as claimed had been known for a long time, and it had as well been known to remove the water by adding a zeolite filler. The asserted stabilisation was, in its view, only the result of this addition. Even in [0049], there was a hint to zeolite being a filler.

(5) With regard to inventive step, Respondent 1 suggested that zeolite A would be the first zeolite to be tested when the storage stability was to be improved,

because it was the prevailing product of this kind in the market. Nor had the Patent Proprietor presented any comparative examples using zeolite X or Y.

Respondent 2 identified D1 as being the closest state of the art in view of the fact that the presence of a wetting agent was not excluded by the claims. The document clearly taught that the disadvantageous effect of that additive on the setting time, which was an indication for a poorer storage stability, could be compensated by the addition of zeolite 3A as shown in Table 2 of the document (see also D1: page 4, line 42 *et seq.*). Hence, the problem was only to transfer the molecular sieve from the "base" into the "catalyst" component. Therefrom it was not, however, possible to derive a technical effect. Nor could the experimental data of the Appellant show that such an effect was there. Under these circumstances, the onus of proof was, in its opinion, on the Patent Proprietor to show such an effect. Furthermore, D3 would show that the addition of a zeolite to the "catalyst" component would not be detrimental to the storage stability.

When the parties stated that they did not want to make further statements, the Chairman closed the debate.

X. The Appellant requested that the decision be set aside and that the patent be maintained on the basis of the Main Request or, in the alternative, of one of the auxiliary requests, all filed with letter dated 30 March 2006.

The Respondents requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. *Procedural matters*

2.1 Since the objections of the Appellant as to the alleged violations of the formal and procedural requirements in the opposition stage of this case had been waived (sections IV(1)(a) and (f), above), these points were withdrawn from consideration.

2.2 According to the remarks given by the Board at the beginning of the oral proceedings (section IX(1), above), the oral proceedings focused primarily on the Main Request (section IV(1)(g), above).

Main Request

3. *Wording of the claims*

3.1 Neither in the opposition nor in the appeal proceedings were objections raised by the Opponents/Respondents on the basis of Articles 100(c), 123(2) or (3) EPC or by the Opposition Division in the decision under appeal with regard to the requirements of Article 123(2) and (3) EPC. Nor does the Board see any reason to take a different view in this respect.

Thus, apart from the replacement at one instance of "aluminium" by "aluminum" (section IV(1)(g), above), which in the Board's view does not affect the meaning of the claim, the new wording of Claim 1 is based on the original wording of Claims 1, 3, 6 and 7, inclusive of the description as filed, page 5, lines 1 and 2, and on the combination of the features of Claims 1, 6 and 7 as granted, which means a clear limitation of the scope of Claim 1 in comparison with Claim 1 as granted.

3.2 One important issue in dispute between the parties was, however, the meaning of the term "a sodium-aluminium zeolite" in Claim 1.

3.2.1 Whilst the Respondents argued in the oral proceedings that this term was not definite, but just identified the main components of the zeolite (section IX(3), above), the Appellant had already emphasised in the Statement of Grounds of Appeal (page 8) that this term was definitely limited to the presence of only sodium and aluminium as cationic constituents and silicate groups and excluded the presence of any further elements or components (section IV(2), above). In the oral proceedings, it further pointed out that its position had never been challenged by the Respondents in writing (section IX(3), above).

3.2.2 Besides, mention of "zeolites" and "molecular sieves" as such is made eg in the general description of D1 (page 4, line 46) and of Union Carbide Type 3A in Footnote 1 of Table 2 of the document, which, according to D1a is a potassium sodium alumosilicate (D1a: page 1064, last product).

D3 refers to a broad class of synthetic and natural crystalline alumosilicates when explaining the term "zeolite" with a reference to two general formulae

$$x[(M', M''_{1/2}) \cdot AlO_2] \cdot y\,SiO_2 \cdot zH_2O$$

and

$$(1{,}0 \pm 0{,}2)\ M_{\frac{2}{n}}O \cdot Al_2O_3 \cdot Y\,SiO_2$$

,

but without any limitation as to the meaning of the metal cations M', M" and M, respectively (use of "usw." = "etc." in the definitions of M' and M"; no definition of M at all; D3: page 6, line 19 to page 8, line 14; section IV(2), above). Nor are any details given in the examples as to the composition of the zeolite used.

According to D7, page 778, line 1, the zeolites can be used as molecular sieves, which means that the latter word refers only to a specific use of these compounds when dried. This use is further explained in the last paragraph of page 777 of D7, according to which, when dried at high temperatures (to remove the zeolitically bound water/"das 'zeolithisch' gebundene Wasser") zeolites eagerly absorb water and are, therefore, suitable for drying gases and solvents. Another characteristic feature of zeolites described in the same paragraph is the capability of ion exchanging the chemically bound alkali and alkaline earth cations against other ions.

As regards the chemical structure of these compounds, D7 summarises a number of different compounds as being natural zeolites, which, irrespective of their cations (Na and Ca are explicitly mentioned), belong to essentially two groups having different structures of the alumosilicate groups (so-called α- and β-cages, respectively; Fig. 201, see page 777).

On page 778, second paragraph, D7 refers to methods for the preparation of synthetic zeolites of types A, X and Y including chemical formulae of such compounds which would correspond to the definition of the Na-Al zeolites in the patent in suit. This disclosure does not, however, amount to a clear and unambiguous teaching that no alkali other than sodium and no alkaline earth cations may be present in those synthetic zeolites of types A, X and Y, respectively.

Such an assumption would not, in the Board's view, be consistent with the teaching in D3, as illustrated by the two general formulae referred to in the second paragraph of this section, and even less with X8, in particular its passage at page 157, last line, to page 158, line 5. There, mention is again made of alkaline earth ions in the context with zeolites of the three types faujasite and zeolites X and Y, and specifically of calcium in connection with zeolite X. It is not even unambiguously clear that in this latter form of zeolite X a cation other than Ca is necessarily present at all.

In view of these findings, the Board takes the view that the specific mentioning of the specific cations in the definition of the zeolite ("sodium-alumin(i)um zeolite") in both independent claims of the patent in suit (section IV(1)(g), above) serves definitely the purpose of limiting the meaning of this definition with regard to the cations present. This view is further confirmed by page 8 of X1, where the commercial product Wessalith is represented by its chemical formula, a TEM picture (Figure 7) and by the specific reference that it is a "Na-A-zeolite", not only "zeolite A" as would have been sufficient if the Respondents' view on the basis of the formulae in D7, page 778, second paragraph was correct.

3.2.3 Therefore the Board has come to the conclusion that the term "sodium-aluminium zeolite" must be construed to mean a zeolite, the chemical composition of which consists essentially of cations and anions derived only from the elements of sodium, aluminium, silicon and oxygen.

4. *Late-filed document D8*

4.1 In T 1002/92 (OJ EPO 1995, 605, No. 3. *et seq.*, in particular No. 3.4 of the reasons), the requirements for admissibility of late-filed material during appeal proceedings are explained:
"As regards proceedings before the Boards of Appeal, following the same principles new facts, evidence and related arguments which go beyond the 'indication of the facts, evidence and arguments' presented in the notice of opposition in support of the grounds of opposition on which the opposition is based, should only very exceptionally be admitted into the proceedings, if such new material is *prima facie highly relevant* in the sense that it is highly likely to prejudice maintenance of the European patent in suit.

Such a more restrictive and stringent requirement for the admissibility of late-filed facts, evidence and related arguments during appeal proceedings is fully consistent with the three previously mentioned findings contained in Opinion G 10/91, ..." (emphasis added).

The decision continued that, when exercising its discretion under Article 114 EPC, the Board should also consider "other relevant factors in the case, in particular whether the patentee objects to the admissibility of the new material and the reasons for any such objection, and the degree of procedural complication that its admission is likely to cause. In general the later that such new material is filed, the greater the degree of procedural complication that it is likely to cause."

Therefore, the Board in that decision concurred with some earlier decisions, in which late-filed facts, evidence and related arguments had been held inadmissible regardless of their relevance because of their late filing without adequate excuse and because of abuse of procedure, respectively.

4.2 Having regard to the time aspect of the question of admissibility, ie the point in time when D8 was filed by Respondent 1 (letter dated 27 April 2006) and was received by the Appellant (sections VIII and IX(2), above), it has been clear in view of this jurisprudence (section 4.1, above) that D8 could only exceptionally be admitted *if it was prima facie of outstanding importance* for the outcome of the appeal proceedings. This will be investigated hereinafter.

4.3 Page 2, lines 19 to 27 of D8, refers to a composition of a two-part silicone composition including, in both of its parts, an amount of molecular sieve. On page 3, lines 31 to 34, D8 continues that the composition is "particularly effective as a desiccant because it includes molecular sieves ... The preferred desiccant material is molecular sieve or zeolite prepared from a mixture of oxides, such as Na_2O, K_2O, MgO, Al_2O_3, SiO_2 and Fe_2O_3."

The subsequent paragraph of the document reads: "The amount of water vapor which can be adsorbed is related to the amount of molecular sieves in the composition. For use as a desiccant material in the seal of an insulated glass unit, for example, it is preferred that the amount of molecular sieves be as high as practical, as high as 250 parts may be used. ... The amount of molecular sieves which can be used is related to the desired thickness of the composition after mixing and the viscosity of the polymers used in the composition."

In Examples 1 to 3, also mentioned in the above letter of Respondent 1, the commercial available molecular sieve used is only characterised by its trade name, its nominal pore width (3Å) and its producer. Based on this information, one could only speculate about its composition. Thus, a 3Å type zeolite of this producer is referred to as the last product on page 1064 of D1a (cf. section 3.2.2, above).

4.4 From the summary given in section 4.3, above, it is evident that D8 is not of particular relevance, as confirmed by Respondent 1 (section IX(2), above), in comparison with those documents originally cited by the Opponents, in particular D3 (see the decision under appeal, sections III(2) and (4) to (7), above).

Therefore, document D8 was excluded in the oral proceedings from further consideration in this case under Article 114(2) EPC.

5. *Problem and solution*

5.1 The patent in suit concerns, in a primary aspect, a silicone composition in two-part/two-component form, the composition being cross-linkable by addition reaction between a cross-linkable polyorganosiloxane and a silicon-hydrogen groups containing cross-linking agent and containing a Pt catalyst for enhancing this curing reaction. According to a secondary aspect, the patent in suit additionally relates to the use of Na-Al zeolite as stabilising and protecting agent for the Pt catalyst in materials as above for dental impressions.

5.2 Silicone compositions for dental impressions of the type according to the first aspect, above, and consisting of two pastes (the "base" and the "catalyst" pastes: cf. sections II(2) and (3), above) had already been known prior to D3 (D3: page 2, lines 9 to 15), as can eg be seen from D5 (Claim 1). In the latter document, reference had additionally been made to the good storage stability of its compositions (D5: column 6, upper half).

5.2.1 Besides their respective reactive components, ie polysiloxanes, cross-linker and catalyst, the pastes of such compositions normally contain fillers as explained in D3, page 2, lines 9 to 25.

5.2.2 Fillers were also mentioned in D5 as one possible selection from different customary additives referred to therein (column 3, lines 36 to 40). Amongst a long list of examples of fillers, mention was made in D5 (column 3, lines 41 to 60) of "so-called 'molecular sieves'" (loc. cit., line 50 and Claim 23). However, no emphasis was put on this type of filler, nor was there given any further mention of these products or explanation as to their chemical composition.

5.2.3 Contrary to D5, reference is made, however, in D3 specifically to the addition of zeolites to such silicone compositions for dental impressions. Moreover, storage stability was also referred to in D3, as pointed out by the Opponents/Respondents and in the decision under appeal (No. 6.3.1 of the reasons).

5.2.4 Therefore, the Board has decided not to deviate (i) from the decision under appeal or (ii) from the point of view of all the parties as regards the choice of D3 as representing the closest state of the art.

5.3 When assessing the disclosure and the teaching of D3, it is, in view of the further arguments of the Respondents and of Claim 13 of the patent in suit, necessary additionally to take into consideration the purpose of the addition of zeolite in D3 to a dental impression material of the above kind.

5.3.1 Due to a normally present excess of Si-H groups not used up in the curing reaction with the vinyl-groups and the presence of the Pt catalyst, hydrogen evolves, when the surface of the cured dental impression replica of the mouth, which serves as a mould for the plaster of Paris model, comes into contact with water. This happens namely when an aqueous plaster of Paris paste is cast into the cured silicone mould. The hydrogen forms gas bubbles at the interface between the cured dental impression mould and the plaster of Paris material and, hence, causes a defective surface of the final model. Avoiding these deficiencies had hitherto been time-consuming and costly (D3: page 2, line 26 to page 3, line 18). It was primarily this technical problem which was to be overcome by D3.

5.3.2 The solution to this primary problem was achieved, according to D3, by the addition of a zeolite containing particularly finely divided palladium or its alloys to the "base" or the "catalyst" paste or both, because the Pd metal or its alloys absorbs the hydrogen *without adversely influencing the curing reaction and the storage stability of the composition*. Moreover, the zeolite additionally adsorbs traces of moisture from the fillers and, thus, also prevents the formation of hydrogen gas (D3: page 3, line 25 to page 4, line 18). Hence, it is, in the Board's view, clear that in D3 the zeolite served only as a carrier for the finely divided Pd and, as confirmed by the Respondents' repeated statements in the oral proceedings, as a desiccative to prevent the detrimental formation of hydrogen gas.

5.4 The asserted effect of preventing defective surfaces of the plaster of Paris model, referred to as small craters rendering the model useless when prepared in the absence of the Pd-containing zeolite (Example 1 of D3), was demonstrated in Examples 2, 3 and 4 of D3. In the latter examples, it was stated that the surface of the model had no damage at all (Example 2), that it was also perfectly smooth (Example 3), and that the model had an even, smooth surface (Example 4).

5.4.1 The composition of Example 2 differed from that used in (comparative) Example 1 only in that, in the "base" paste, a small part of the inert filler ($CaSO_4$) had been replaced by the same amount of Pd-containing zeolite (5 parts of zeolite with a palladium content of 0.2 %; page 11, lines 13/14).

5.4.2 In Example 3, the "base" paste of Example 1 was used together with a "catalyst" paste which differed from the one used in Example 1 only by part of the pyrogenically produced silica contained therein being replaced by the same amount of Pd-containing zeolite (1 part of zeolite with a palladium content of 1 %; page 12, lines 3/4).

5.4.3 In Example 4, both the "base" and the "catalyst" pastes contained 5 parts of a zeolite with a palladium content of 0.05 % (page 12, lines 20/21 and page 13, lines 3/4). Furthermore, both of these pastes differed from the compositions of the respective components in Example 1 also in respect of the silicone components and the fillers used (two vinyl-containing silicones with different viscosities instead of only one, and diatomaceous earth instead of calcium sulphate).

5.4.4 These examples are, however, completely silent about storage stability. Moreover, it is clearly evident that the question of where to add the Pd-containing zeolite was of no significance at all for the above surface problem of the final model to be overcome by D3.

5.5 Whilst D3, thus, primarily aimed at the solution of a problem occurring *during and after the application* the cross-linkable silicone composition *without impairing* the, however unexplained, "storage properties" of the uncured composition, it can be derived from [0014] to [0023] that the technical problem to be overcome by the patent in suit was to prevent the loss of activity (by aging) of the Pt catalyst during the storage of the composition *prior to* its use (ie prior to the mixing of its two components) even at elevated temperatures, which, in effect, relates to an improvement of the storage properties (by the way, this definition of the technical problem would be the same with regard to D5).

5.6 According to Claim 1 of the patent in suit, this problem has been solved by the addition of a Na-Al zeolite to the "catalyst" component of the two-part silicone composition, as confirmed by the experiments reported in [0052] to [0055].

This finding is also corroborated by the data in experimental report X6 (section IV(4), above) showing the effect of aging at elevated temperature on the catalyst activity. In particular, the table of its Example 5, comparing the working and setting times of compositions before and after aging, demonstrates that the results of Example 3 were significantly better than those in the other (comparative) Examples 2 (without zeolite) and 4 (with a potassium-aluminium zeolite). Moreover, Example 6 of the report describing an experiment wherein the potassium-aluminium zeolite had been added to both pastes resulted in a complete loss of the ability to cross-link after aging.

Whilst it was criticised by Respondent 2 that no comparative example had been provided by the Appellant with a sodium-potassium-aluminium zeolite, the results of the experimental report *per se* have not been disputed by either Respondent. Nor have any counterexperiments been filed by the Respondents, who, thus, did not discharge their burden of proof, which had lain on them as opponents who had disputed inventive step.

In view of the fact that D3 as the closest piece of prior art relates to a broad range of zeolites (D3: page 6, line 19 to page 8, line 14, for further details in this respect see further below, in particular the two general chemical formulae), the Board sees no reason not to accept the above experimental results as valid comparisons with D3.

In view of these results and facts, the finding in the decision under appeal (relating to the narrower Auxiliary Request 2, cf. section II(6), above) that no technical effects had been demonstrated vis-à-vis D3 (section III(7), above) cannot be upheld even with regard to the broader scope of the Main Request.

5.7 Therefore, the Board is satisfied that the technical problem has credibly been solved.

6. *Novelty*

Apart from the replacement of "aluminium" by "aluminum" in Claim 1 (section 3.1, above), the claims under consideration are identical to those of the Main Request (sections II(2) and (5), above) dealt with in the decision under appeal (section III(2), above).

6.1 The finding in the decision under appeal that the subject-matter of Claim 1 lacked novelty over D3 was based, in particular, on the composition of the "catalyst" paste as defined in Example 3 of D3 including 1 part of zeolite with a palladium content of 1% (page 12, lines 3/4) and the description of "the zeolite" on page 6, line 19 to page 7, line 5. Furthermore, "The formula on line 23 discloses, with M' = Na, a sodium-aluminium zeolite." (No. 3.2 of the reasons in the decision under appeal).

6.2 However, the formula of the zeolite

$$x[(M', M''_{1/2}) \cdot AlO_2] \cdot y\, SiO_2 \cdot zH_2O$$

as used as a carrier for the palladium or its alloys, (D3: page 6, line 23; page 8, lines 15/16 and the characterising part of its Claim 1) and as referred to in the decision under appeal, clearly mentions the presence of both M' and M", which according to the top of page 7 relate to "M' = Li, Na, K usw." and "M" = Mg, Ca, Sr usw." ("usw." = etc.).

Then, a second definition of zeolites is given in D3 (page 8, lines 6 to 14), referring to anhydrous zeolites contained in the vinylsilicone pastes of the document. These zeolites were described as having a faujasite structure and carrying finely divided metallic palladium. Synthetic faujasite was reported to have the general composition:

$$(1,0 \pm 0,2)\ M_{\frac{2}{n}}O \cdot Al_2O_3 \cdot Y\, SiO_2$$

Moreover, according to D3, synthetic faujasites with values of y of 2 to 3 are generally called zeolite X, and those with values of y of 3 to 6 are called zeolite Y. This passage is, however, completely silent with respect to the meaning of the two symbols M and n as used in this formula.

Furthermore, on page 7, lines 19 to 24, reference is made to the fact that the cations present in the zeolite can be exchanged and that it is thereby possible to influence, by ion exchange, the pore diameters, the adsorption properties and the catalytic behaviour according to the nature of the metal cations exchanged.

In the Board's view, this statement clearly excludes that all the zeolites encompassed by either of the above chemical formulae (cf. section IV(2), above) may be construed to be equivalent, let alone identical to each other, in their chemical behaviour. Nor was it clearly and directly derivable from the description of the "catalyst" of Example 3, even in consideration of the above passages of the description of D3, that the zeolite used in the example had, in fact, been a Na-Al zeolite.

In view of the above different definitions of the "zeolite" in D3, it is not possible, as suggested by Respondent 2 (letter of 19 March 2004, item 2.2.1.1, last paragraph) to read a specific zeolite (zeolite A) into the general term zeolite ("hineinlesen").

6.3 Consequently, the subject-matter of Claim 1 is not anticipated by D3 in itself.

6.4 However, the Respondents additionally argued with reference to zeolites X and Y that the skilled person would have known from textbooks such as D7 and X8 as part of his common general knowledge, that those other zeolites would meet the definition of "sodium-aluminium zeolite" as used in the impugned claims.

As already shown in section 3.2.2, above, these two textbooks do not, however, provide the information or teaching which would clearly and unambiguously establish that in D3, positively, a Na-Al zeolite, but no zeolite on the basis of or containing other cations was used or was to be used.

Hence, these arguments of the Respondents on the basis of D7 and X8 are not convincing to the Board.

6.5 According to Decision G 2/88 (OJ EPO 1990, 93; Order (iii)), a claim to the use of a known compound for a particular purpose, which is based on a technical effect which is described in the patent, should be interpreted as including that technical effect as a functional technical feature, and is accordingly not open to objection under Article 54(1) EPC provided that such technical feature has not previously been made available to the public.

6.5.1 As already indicated in section 5.3.2 and 5.4 to 5.5, above, aging problems of the Pt catalyst were never considered in D3. Nor does D3 contain any reference to an effect of the zeolite on the Pt catalyst activity, let alone as a stabilising and protecting effect therefor.

6.5.2 Consequently, the use of a Na-Al zeolite as stabilising and protecting agent for the Pt catalyst in materials for dental impression based on addition-cross-linking polyorganosiloxanes has not been made available to the public by D3 either.

6.6 Other documents have not been cited by either Opponent/ Respondent with regard to novelty.

Nor has the initially asserted public prior use further been pursued by Respondent 1 after the amendment of the claims (section II(2), above). In fact, none of the documents filed to support this objection showed a two-part composition containing a Na-Al zeolite in the "catalyst" component.

In view of these facts and the above findings, the Board has, therefore, come to the conclusion that the requirements of Article 54 EPC are met by the subject-matter of both independent Claims 1 and 13.

7. *Inventive step*

It remains to be decided whether the solution found was obvious to a person skilled in the art.

7.1 As shown in sections 5.2 to 5.4.4, above, D3 itself does not consider at all the relevant technical problem as set out in section 5.5, above, of preventing the loss of activity of the Pt catalyst. Rather, the document refers to a problem occurring at the interface between the cross-linked dental impression mould and the plaster of Paris model formed therefrom, viz. an insufficient surface quality of the latter model (section 5.3.1, above). The solution for this problem suggested in D3 was the addition of finely divided (hydrogen gas absorbing) palladium on a zeolite carrier, which has the additional benefit to adsorb traces of moisture from the fillers of the composition which could also initiate the formation of hydrogen gas bubbles and, hence, craters at the surface of the model (sections 5.3.1 to 5.4.4, above).

Nor does the document refer to the use of *Na-Al zeolites* as the carrier for the finely divided palladium or its alloy.

Therefore, D3 as such does not provide an incentive to add a Na-Al zeolite to the catalyst component of the claimed composition, let alone to use it as the stabilising and protecting agent for the Pt catalyst in addition-cross-linkable silicone-based material for dental impressions.

7.2 As shortly addressed in section 5.2 to 5.2.3, above, D5, which is older than D3, relates to RTV silicone materials, in general, and teaches to provide it as a two-component package. It neither relates to the addition of a specific zeolite as a filler, nor does it address the aging problem of the Pt catalyst.

It follows that it cannot contribute to the solution of the relevant technical problem either, irrespective of whether it is considered in isolation or together with D3.

7.3 Document D1 also concerns a silicone dental impression material of the above type. Like D3, it also addresses the problem of insufficient surface quality of a plaster of Paris model formed by means of a cross-linked silicone impression mould. In this case, the inferior surface quality was deemed to be the result of the hydrophobic nature of silicone materials, in general, which are not readily wet when brought into contact with the hydrophilic surfaces of eg the soft tissues of the mouth or the plaster of Paris suspension to be hardened in contact with the impression mould to give the final model.

In order to remedy this deficiency, the document suggests to incorporate into the "base" component a silicone-polyether compound with at least one hydrophobic silicone moiety and at least one hydrophilic polyether moiety (Claim 1). By such incorporation, the hydrophobicity of the impression composition is reduced.

As demonstrated by Example 1 of D1, including such a compound in its "base" component in increasing amounts of from 0% to 8.2% of the cured sample, the contact angle decreased and the water uptake of the respective compositions increased.

However, as shown in Example 2, the introduction of such an additive tended to aggravate another problem, the stability problem caused by moisture (D1: page 4, lines 42/43). Whilst the sample free of the additive had a bench set time of 7.5 min, this time was nearly doubled in sample 2 containing 4.3% of the additive. This reduction in cross-linking efficiency, close to halving, clearly demonstrated the problem caused by the wetting additive.

In order to remedy this deficiency, Claim 5 of D1 suggests that at least a portion of the inorganic fillers used in these compositions consists of a water-absorbing or water-adsorbing inorganic filler, preferably calcium sulphate hemi-hydrate or molecular sieve.

Accordingly, in the further samples of Example 2, 4.3% of a molecular sieve, of dried calcium sulphate and of dried sodium sulphate, respectively, were added to the "base" component. The commercial molecular sieve product already mentioned in the context of D1a (section 3.2.2, above) brought the bench set time back close to the initial value, ie to 8 min instead of the original 7.5 min, mentioned above, whilst the other two substances gave slightly poorer results.

These facts and findings show that D1 is in no way related to the relevant technical problem. Consequently, it cannot provide an incentive either to overcome this problem, let alone by a solution as defined by the independent claims of the patent in suit.

7.4 In summary, it can only be concluded that the subject-matter of independent Claims 1 and 13 also involves an inventive step.

8. By the same token, the above findings are also valid for the remaining claims appendant to the above independent Claims 1 and 13, respectively.

9. Since the Main Request of the Appellant is successful, it is not necessary to consider any one of its Auxiliary Requests, nor the question as to their admissibility as addressed in section IX(1), above.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to maintain the patent on the basis of Claims 1 to 14 of the Main Request filed with letter dated 30 March 2006 and after any necessary consequential amendment of the description.

The Registrar:	The Chairman:
E. Görgmaier	R. Young