Trial Decision

Invalidation No. 2016-800142

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The case of trial regarding the invalidation of Japanese Patent No. 3967542, titled "METHOD OF PRESERVING SILICONE COMPOSITION AND KIT OF SEPARATE PACKAGES" between the parties above has resulted in the following trial decision:

Conclusion

The scope of claims of Patent No. 3967542 may be corrected in accordance with Claims [1] and [2, 3] after the correction as in the corrected scope of claims attached to the written correction request.

The trial of the case was groundless.

The costs in connection with the trial shall be borne by the demandant.

Reason

No. 1 History of the procedures

History of the major procedures according to the case is set forth as in the following:

December 1, 1999 Filing of the application underlying the claim for priority (Japanese Patent Application No. H11-342298)

November 24, 2000 Filing of the present application (Japanese Patent Application No. 2000-357336)

June 8, 2007 Registration (Patent No. 3967542 (Hereinafter referred to as "the Patent"))

December 28, 2016 Demand for Trial

March 27, 2017 Written reply, Request for Correction

April 13, 2017 Notification of matters to be examined (1)

May 19, 2017 Oral proceedings statement brief (1) from both parties

May 25, 2017 Notification of matters to be examined (2)

June 16, 2017 Oral proceedings statement brief (2) from both parties

June 21, 2017 Memo of oral proceeding statement brief

June 23, 2017 Oral proceedings statement brief (3) from the demandant

June 23, 2017 First oral proceeding

July 14, 2017 Written statement from Demandee

July 28, 2017 Written statement from the demandant

Hereinafter, "the written demand" is abbreviated as "the demand", and "Oral proceedings statement brief" is abbreviated as "the Brief", and "Evidence A No. 1" etc. is abbreviated as "A1" etc.

No. 2 Allegation by the parties

1. Demandant's allegation and means of proof

The demandant seeks for a trial decision to the effect that "the patent according to Patent No. 3967542 should be invalidated. The cost should be borne by the demandee". Summary of allegation and means of proof submitted by the demandant are set forth as below:

(1) As for the request for correction

In the scope of claims before correction, the target to be filled and kept in a depressurized inclusion body is "each divided agent". Further, "divided agent" is a silicone composition, which may be cured via an addition-type reaction by mixing with another "divided agent". Specifically, an individual divided agent is a silicone composition (According to the Detailed Description of the Invention, it is prepared as a paste or a liquid composition). It specifies that such a silicone composition is filled and kept in a depressurized inclusion body.

In contrast, in Claim 1 subject to the request for correction, the target to be filled and kept in a depressurized inclusion body is a container filled with each divided agent (i.e., silicone composition; it is prepared as a paste or a liquid composition).

Specifically, the target to be included and kept into a depressurized inclusion body was "silicone composition" before the correction, which is modified with "container" filled with a silicone composition.

This substantially alters the scope of the claims, and violates the provision of Article 126(6) of the Patent Act as applied mutatis mutandis to Article 134-2(9) of the Patent Act, and thus the correction request is illegal. (Demandant's Brief (1), Appendix, page 2, line 9 to last line)

(2) Reason for Invalidation

A. The inventions according to Claims 1 to 3 of the Patent are identical to the invention described in A1 distributed before the priority date of the Patent, and/or were easily conceivable by a person skilled in the art on the basis of the inventions described in A1. Therefore, the patents were granted for a reason of the patented invention corresponding to Article 29(1)(iii) of the Patent Act and in violation of the provision of Article 29(2) of the Patent Act. Consequently, the patents correspond to the provision of Article 123(1)(ii) of the Patent Act, and thus should be invalidated. (Written demand, page 7, lines 7 to 12)

B. Regarding Difference 1 according to the difference of silicone composition

(A) Invention 1 is directed to a method for preserving a curable silicone composition where each divided agent is filled in a container, characterized in that the container is sealed and preserved in a depressurized inclusion body. Therefore, the timing when the composition is cured via an addition-type reaction is after mixing the divided agent. Thus it is not directly related with a preservation method as to which the curing is implemented under an ambient temperature or under heating condition. Specifically, Invention 1 and the A1 invention are different from each other only in the presence or the absence of a platinum catalyst inhibitor to be added to a composition that undergoes a curing reaction. First of all, the addition of a platinum catalyst inhibitor relates to a temperature of addition-type reaction that initiates by mixing, which has nothing to do with the feature of Invention 1 (the problem to be solved by the Invention and means for solving the problem). Therefore, Difference 1 is not a substantial difference. (Demandant's Brief (1), Appendix, page 28, line 15 to page 29, line 5)

(B) Further, it can be recognized from the matters described in A2 to A6 and A17 to A21 that a two-part type silicone composition curable by an addition-type reaction at ambient temperature was a matter of common technical knowledge or a well-known technique for a person skilled in the art before the priority date of the Patent. It was easily conceivable by a person skilled in the art to apply this to the A1 invention to

overcome Difference 1 and achieve Invention 1. (Demandant's Brief (1), Appendix, page 7, line 12 to page 24, line 5 from the bottom, page 29, line 6 to page 30, line 4 from the bottom)

(C) It is submitted that the purpose for including platinum catalyst inhibitor in a multi-part silicone composition of the A1 invention is to manage curing time, as can be seen from the description of paragraph [0035] that "To obtain a longer working time or "pot life", the activity of the catalyst under ambient condition is retarded or suppressed by the addition of a suitable inhibitor." Despite the fact, it does not result in the failure to manage curable time unless a platinum catalyst inhibitor is contained in an underfill process, nor does the silicone composition lose its fluidity due to instant curing after mixing two parts. It can be seen that a two-part type silicone composition that is curable at ambient temperature through an addition-type reaction and used as a resin encapsulant of semiconductor disclosed in A21 has sufficient fluidity to be used for sealing semiconductor resin by mixing them without a platinum catalyst inhibitor.

In the two-part type silicone composition curable at ambient temperature through an addition-type reaction and used as an encapsulant for a manufacturing process of semiconductors, it is not at all essential to include an addition-type reaction inhibitor such as a platinum catalyst inhibitor. Thus, there is no disincentive to replace a heat-curable type silicone composition of the A1 invention with an ambient temperature-curable type silicone composition of Invention 1. (Demandant's Brief (2), Appendix, page 12, line 16 to page 22, line 12)

(D) The two-part type silicone composition curable at ambient temperature through an addition-type reaction without a platinum catalyst inhibitor has sufficient fluidity for a resin encapsulant of a semiconductor before and after mixing two parts. It is thus obviously widely used as a resin encapsulant of a semiconductor together with the silicone composition curable though heat-curable type addition-type reaction.

Further, as exemplified in A21 to A29, both a silicone composition curable through addition-type reaction by heating and a silicone composition curable through addition-type reaction at ambient temperature are widely used in the technical field of semiconductor fabrication (it is obvious from A21 to A29 that there is no barrier to use a silicone composition curable at ambient temperature through addition-type reaction as an encapsulant of a semiconductor). A person skilled in the art could determine as necessary which to select from them.

Specifically, it is simply a matter of material selection or design as to which is used as an encapsulant of semiconductor resin sealing, heat-curable type or ambient temperature-curable type, in the technical field of manufacturing semiconductors. A person skilled in the art who reads the A1 invention disclosing a silicone composition "vacuum dispensable silicone compositions that are substantially free of air" and "in which each of packed individual parts are mixed together and cured by heating at a temperature of 70 to 200°C, preferably 80 to 150°C ,for a suitable length of time " could have easily conceived of the Invention by replacing with a silicone composition "curable at ambient temperature via an addition-type reaction", which was commonly-used technical knowledge and a well-known conventional technique for an encapsulant of semiconductor resin sealing, with the exercise of the ordinary inventive ability of a person skilled in the art starting from the A1 invention. (Demandant's brief (2), Appendix, page 22, last line to page 38, line 7)

(E) Further, there is a general problem to save as many steps as possible and increase

efficiency. It is only a matter of design or material selection as to which silicone composition to be cured through an addition-type reaction is used, an ambient temperature-curable type or a heat-curable type.

Therefore, it can be said that a person skilled in the art could have been motivated to use an ambient temperature-type as a silicone composition curable at an addition-type reaction by saving the step of mixing platinum catalyst inhibitor to save as many steps as possible and increase efficiency. Thus a person skilled in the art could have easily conceived of the Invention by replacing a heat-curable type with an ambient temperature-curable type, starting from the A1 invention. (Demandant's Brief (3), Appendix, page 4, lines 9 to 17)

(F) The description of paragraphs [0035] to [0039] of A1 is directed to a one-part type silicone composition, not a multi-part type silicone composition. Thus Evidence A No. 1 fails to describe that a platinum catalyst inhibitor is an essential component for imparting fluidity in a vacuum dispensing process with respect to a multi-part type silicone composition. In a multi-part type silicone composition, a platinum catalyst inhibitor is not an essential component. Thus there is no disincentive to eliminate a platinum catalyst inhibitor and change from a heat-curable type to an ambient temperature-type. (Demandant's written statement, Appendix, page 3, line 5 to page 6, line 9)

C. Regarding Difference 2 according to the difference in the preservation method

(A) According to the description of [0049] of A1, the composition of the present invention (A1 invention) should be stored in a sealed container to prevent exposure to air and moisture (essential). In addition, it is preferably stored in an aluminized polyethylene/polyester bag, and thus the package of the sealed container (essential) and aluminized polyethylene/polyester bag (preferable) is recommended.

A storage method is exemplified in [0056] in accordance with the description of [0049], which targets and includes the composition of A1 invention. Therefore, a person skilled in the art who read the description of [0049] and [0056] could understand that the A1 invention similarly exemplifies the division and the enclosure of the composition into individual polyethylene syringes and the inclusion into aluminized polyethylene/polyester bag. Thus the A1 invention should be affirmed as such. (Demandant's Brief (1), Appendix, page 4, line 14 to page 6, line 23)

(B) Even if Difference 2 were present, A1 describes a method for filling the composition in a syringe, putting the syringe into a polyethylene/polyester bag, and subjecting the bag to heat sealing in a reduced pressure for storage in a refrigerator ([0056]). This storing method may easily apply to individual parts of a multi-part type composition. (Demandant's Brief (1), Appendix, page 30, last line to page 34, line 10)

(3) Regarding "kit of separate packages "

The "kit of separate packages" should not be construed as "one where a container filled with two or more divided agents is included into a depressurized inclusion body (bag)". It should be construed as a combination of "a container filled with two or more divided agents" and an "inclusion body". Such construction is not based on the recitation of the scope of the claims.

Claim 2 after the correction of the scope of the claims specifies that "A kit of separate packages for the formation of curable silicone composition, said kit of separate

packages consisting of a dividing agent that forms a silicone composition curable through an addition-type reaction and at ambient temperature by mixing divided agents that are divided into two or more parts, and each divided agent being filled into a container, which is included to a depressurized inclusion body during storage." and is recited as an invention of a product (a container) of "kit of separate packages".

The "kit of separate packages" of the case should be construed as meaning "a container filled with two or more packaged divided agents", and a container "each divided agent being filled into a container, which is included into a depressurized inclusion body during storage", not meaning a combined product of "a container filled with two or more packaged divided agents" and "a depressurized inclusion body (bag)". (Demandant's Brief (3), Appendix, page 1, line 9 from the bottom to page 2, line 6)

(4) Means of Proof
A1: European Patent Application Publication No. 0955328 Specification
A2: Japanese Unexamined Patent Application Publication No. H06-157914
A3: Japanese Patent Publication No. H04-45538
A4: Japanese Unexamined Patent Application Publication No. H10-226613
A5: Japanese Unexamined Patent Application Publication No. H11-318946
A6: Japanese Unexamined Patent Application Publication No. H10-121025
A7: United States Patent No. 5848894 Specification
A8: United States Patent No. 5722829 Specification
A9: Japanese Unexamined Patent Application Publication No. H07-96977
A10: Japanese Unexamined Patent Application Publication No. H07-313576
A11: Japanese Unexamined Patent Application Publication No. H10-5333
A12: Japanese Unexamined Patent Application Publication No. H08-229122
A13: Japanese Unexamined Patent Application Publication No. H08-92005
A14: Japanese Unexamined Patent Application Publication No. H06-190021
A15: Japanese Unexamined Patent Application Publication No. H11-56969
A16: Japanese Unexamined Patent Application Publication No. H11-128314
A17: National Publication of International Patent Application No. H10-502352
A18: Japanese Unexamined Patent Application Publication No. H05-140320
A19: Japanese Unexamined Patent Application Publication No. H07-252466
A20: Japanese Unexamined Patent Application Publication No. H06-256657
A21: Japanese Unexamined Patent Application Publication No. H10-60282
A22: Japanese Unexamined Patent Application Publication No. H09-111127
A23: Japanese Unexamined Patent Application Publication No. H06-107947
A24: Japanese Unexamined Patent Application Publication No. H07-72169
A25: Japanese Unexamined Patent Application Publication No. H07-335790
A26: Japanese Unexamined Patent Application Publication No. H08-97343
A27: Japanese Unexamined Patent Application Publication No. H11-181289
A28: Japanese Unexamined Patent Application Publication No. H11-317837
A29: Japanese Unexamined Patent Application Publication No. H11-213868
A30: Toshifumi KUBOYAMA, "Introduction to Underfill Resin for Portable Device ", Journal of THE SOCIETY OF RUBBER SCIENCE AND TECHNOLOGY, Vol. 84 (2011), No. 10, pages 313 to 320
A31: A printed matter of a web page of "SHIN-ETSU SILICONE Product Focus: Room temperature addition-cure RTV silicone rubbers"

(https://www.silicone.jp/products/notice/138/index2.shtml)
A32: Japanese Unexamined Patent Application Publication No. H06-37213

2. Demandee's allegation and means of proof

Demandee seeks for a trial decision to the effect that "the demand for trial regarding the invalidation is groundless, and the costs in connection with the trial shall be borne by the demandant". Summary of Demandee's argument and means of proof are set forth as below:

(1) As for the request for correction

Claim 1 before the correction specifies that "each divided agent is included and kept in a depressurized inclusion body during storage". Even after correcting with "each divided agent being filled into a container and the container being included and kept into a depressurized inclusion body", it does not change at all the fact that each divided agent is present in an inclusion body. Specifically, Claim 1 before the correction does not specify how to include each divided agent into an inclusion body, but after the correction further only specifies the included state so that each divided agent is "filled in a container" and further included in the depressurized inclusion body. Thus it is a legitimate request for correction. (Demandee's Brief (2), page 14, lines 8 to 15)

(2) Invalidation Reasons argued by the demandant

A. The invention of a multi-part type composition described in A1 and the invention of a storing method of a multi-part type composition should have been found as in the following:

"A plurality of polyethylene/polyester bags storing two or more divided, individual parts in a state substantially free of air, wherein said individual parts form a heat-curable silicone composition, which is curable through an addition-type reaction and curable by mixing and heating said individual parts containing a platinum catalyst inhibitor having a boiling point higher than 150°C at 0.10 MPa in an amount sufficient to suppress the curing of the composition at ambient temperature, wherein said parts are sealed in the bags with reduced pressure during storage, and wherein the bag stores the vacuum-dispensable composition that are used as an underfill for semiconductors." "A method for storing a heat-curable silicone composition that has not been divided, the composition being curable by heating and curable by the addition-type reaction and comprising a platinum catalyst inhibitor and having a higher boiling point than 150°C at 0.10 MPa in an amount sufficient to suppress the curing of the composition at ambient temperature, wherein the composition is sealed in one polyethylene syringe in a state substantially free of air during storage, and the syringe is included and kept in a polyethylene/polyester bag, and the vacuum-dispensable composition being used as an underfill for semiconductors."

(Written reply, page 17, line 11 from the bottom to page 19, line 3 from the bottom)

B. Regarding Difference 1 according to the difference of silicone composition

(A) As for the finding of the A1 invention, the technical matter to "include a platinum catalyst inhibitor having a higher boiling point than 150°C at 0.10 MPa in an amount sufficient to suppress the curing of the composition at ambient temperature" is an essential configuration of the technical concept of the invention disclosed in A1.

Specifically, A1 clearly discloses that the heat-curable, vacuum-dispensable silicone composition should be used as an underfill for semiconductors (or semiconductor substrate), and it requires fluidity (low viscosity) during vacuum dispensing process, and a platinum catalyst inhibitor should be added as an essential component that imparts fluidity to the composition in a vacuum dispensing process. (Demandee's written statement, page 3, line 1 to line 2 from the bottom)

(B) The platinum catalyst inhibitor of the A1 invention is essential for a solution to the problem targeted by A1. Specifically, A1 discloses two facts that the silicone compositions evolve copious amounts of air during vacuum dispensing to produce voids, and this gas generation is attributed to a low-boiling point component in the composition as a problem of the conventional technique ([0004], [0005]), and uses a composition substantially free of air that has undergone a degassing process and uses "a platinum catalyst inhibitor having a higher boiling point than 150°C at 0.10 MPa" as a means for solving the problem. As such, A1 discloses an invention that solves the problem of heat-curable silicone composition comprising a platinum catalyst inhibitor, and definitely mentions that the platinum catalyst inhibitor is an essential component for the solution to the problem. It can thus be said that such description should prevent exclusion of the platinum catalyst inhibitor and replacing a heat-curable type with an ambient temperature-curable type.

Further, the description of paragraphs [0035] and [0036] cited below with explanation on a reason why the component F is necessary suggests that the composition of A1 should be cured at a high temperature, not at ambient temperature. Therefore, it can be said that paragraphs [0035] and [0036] are particularly teaching-away from excluding a platinum catalyst inhibitor and replacing heat-curable type with ambient temperature-curable type.

Furthermore, the description of the effects of the component F in paragraphs [0037] and [0038], i.e. "Compositions containing these inhibitors generally require heating at 70°C or above to cure at a practical rate" and "sufficient storage stability and cure rate are obtained", explains that the component F needs not be an ambient temperature-type, but may be a high temperature-curable type. Therefore, it can be said that paragraphs [0037] and [0038] are also teaching-away from excluding a platinum catalyst inhibitor and replacing heat-curable type with ambient temperature-curable type. (Demandee's written statement, page 4, line 3 to page 5, line 7)

(C) The A1 invention is an invention that solves the problem having a heat-curable type silicone composition including a platinum catalyst inhibitor, and the platinum catalyst inhibitor is an essential component for the solution to the problem to the A1 invention. Thus a person skilled in the art who reads A1 would not conceive of excluding the component for a reason of saving the number of steps. In that sense, it is obvious that the description does not correspond to the conception or the suggestion of replacing heat-curable type with ambient temperature-curable type in A1. (Demandee's written statement, page 5, line 8 to line 6 from the bottom)

C. Regarding Difference 2 according to the difference in preservation method

According to the method for storing the description of A1, one-part type has a storage life of several months at a temperature of -20 to -30°C, whereas a multi-part type may have a storage life of six months or more at ambient temperature. The difference in this storage period is based on the fact that the one-part type has a

relatively short storage life because reactive components mixed in one-part are likely to react with each other even if a platinum catalyst inhibitor is contained, whereas the multi-part type has a relatively long storage life because the reactive components are preliminarily divided so as to prevent the reaction. Accordingly, since a multi-part type has relatively low reactivity, it is unnecessary to utilize a stricter storage method (packaging method) than for one-part type. Thus a person skilled in the art would understand that it is sufficient for a multi-part type composition to seal individual parts with a package as described in [0049].

Further, when conducting a vacuum dispensing operation using a multi-part type composition, a silicone composition divided into a plurality of containers needs to be taken out from each container before the operation and mixed. At that time, if each container is further packaged doubly, the mixing operation is further complicated. Therefore, from the viewpoint of workability in use and further packaging cost, it must be said that a person skilled in the art would not be motivated to package doubly as described in [0056] a multi-part type composition where it was sufficient for individual parts to be sealed with a package. (Demandee's brief (1), page 10, line 10 from the bottom to page 11, line 6)

(3) Regarding "kit of separate packages"

Regarding the "kit of separate packages" of the case, on the basis of the recitation of the claims, it may be construed as "one where a container filled with two or more divided agents is included into a depressurized inclusion body (bag)". (First oral proceeding record, "Demandee", column "2")

(4) Means of Proof

Evidence B No. 1-1: Haruo TABATA, "Adhesion in Electronics Jisso", Journal of Japan Welding Society, Vol. 79 (2010), No. 7, pages 34 to 39

Evidence B No. 1-2: Masatsugu OGATA, "Technical trends in liquid encapsulant for semiconductor devices", Hitachi Chemical, Technical report, No. 39 (2002.7), pages 7 to 12

Evidence B No. 1-3: "Underfill agent for BGA/CSP mounting", Threebond technical news, published on July 1, 2000, Vol. 55, pages 1 to 8

Evidence B No. 2-1: Edited by Editorial Committee of Technology of Vacuum, "Technology of Vacuum ",
First edition on November 26, 1990, pages 415 to 417

Evidence B No. 2-2: Edited by Japanese Standards Association, "GLOSSARY OF THECHNICAL TERMS IN JAPANESE INDUSTRIAL STANDARS [Fourth Edition]", Fourth Edition, First print on November 20, 1995, pages 2000 to 2001

Evidence B No. 3: Yoji MIKI, "New Application of Wiped Film Evaporator ", SHINKO pantech technical report, Vol. 34, No. 2 (1990/8), pages 17 to 21

Evidence B No. 4-1: Edited by Saburo NAGAKURA and others, "Iwanami Rikagaku Jiten Fifth Edition", Iwanami Shoten Publishers, August 20, 2001, Fifth Edition, Fifth print, page 1510

Evidence B No. 4-2: Edited by Kagaku Doujin Editorial Department, "New Edition Sequel: For safely conducting experiments", March 1, 2002, New Edition, 17th Print, pages 75 to 76

Evidence B No. 5: Dow Corning Toray Co., Ltd., A pamphlet of "Silicone for LED

illumination", published on January 2016, page 20
Evidence B No. 6-1: Japanese Unexamined Patent Application Publication No. H07-130794
Evidence B No. 6-2: Japanese Unexamined Patent Application Publication No. H09-172035
Evidence B No. 6-3: Japanese Unexamined Patent Application Publication No. H08-241900

No. 3 As for the request for correction
1. The content of the correction

The request for correction according to the Patent (hereinafter referred to as "the request for correction") seeks for "the correction of the scope of the claims of the Patent No 3967542 as in the corrected scope of claims attached to the request for correction with regard to Claims 1 to 3 after the correction". The content of the correction is to correct the scope of the claims of the Patent as in the following:

(1) Correction matter 1

"A silicone composition curable by mixing two or more divided agents and to be cured through addition-type reaction" of Claim 1 of the scope of the claims is corrected to
"A silicone composition curable at ambient temperature by mixing two or more divided agents and to be cured through addition-type reaction".

(2) Correction matter 2

"Each divided agent is included and kept in a depressurized inclusion body during storage" of Claim 1 of the scope of the claims is corrected to
"each divided agent is filled in a container and the container is included and kept in a depressurized inclusion body during storage".

(3) Correction matter 3

"A silicone composition curable by mixing two or more divided agents and to be cured through addition-type reaction" of Claim 2 of the scope of the claims is corrected to
"A silicone composition curable at ambient temperature by mixing two or more divided agents and to be cured through addition-type reaction".
(Claim 3 depending from Claim 2 shall be corrected similarly.)

2. Appropriateness of Correction
(1) Regarding Correction matter 1

Claim 1 before the correction did not specify at which of an ambient temperature or a high temperature the silicone resin is curable, whereas after the correction it specifies that it is curable at ambient temperature. Thus Correction matter 1 is aimed at restriction of the scope of claims.

Further, the specification attached to the application according to the Patent (hereinafter referred to as "the patent specification") has the following description. (Note that the underlines are by the body. Hereinafter the same.)
"[0002]

[Conventional technique]

Silicone material has excellent properties such as weather proof, electrical properties, low compression permanent strain, heat resistance, and cold resistance, and is thus currently widely used in various fields including electronic devices, automobiles, architecture, medicine, and foods. The ones curable at ambient temperature in this silicone material are used for the materials of heat-resistant paint, adhesives, coating materials, encapsulant for architecture, silicone rubber impression materials for dental use, and soft lining materials for dental and denture uses.

[0003]

[Problem to be solved by the invention]

However, a silicone material curable at ambient temperature tends to gradually entrain air from the gap of a container during storage and cause air to be dissolved into a paste or a solution. Air once dissolved cannot be dissolved into a material in curing, and as a result it remains in a cured body as an air bubble. Further, the cured body entraining the air bubble causes various problems such as decreased strength of material itself, surface roughness due to susceptibility of material surface to grinding, decreased transparency, and decreased air tightness. In a process of research and development of this material over many years, we have found that curable silicone material has such a problem.

[0004]

[Means for solving problem]

The inventors have intensively investigated to solve the above problem and finally found that the depressurized preservation of divided agents of each component for a silicone composition results in the silicone composition with minimal bubbles in a cured body, and the cured body with minimal bubbles may prevent the decrease of strength and decrease of surface roughness etc., and thereby completed the present invention."

Specifically, there is a problem that a silicone material curable at ambient temperature gradually entrains air from a gap of a container during storage, and the air remains in a cured body as a bubble to cause the problem of the decrease of strength of material itself. The invention according to the Patent has been made on the basis of the fact that the depressurized preservation of divided agents of each component for a silicone composition results in the silicone composition with minimal bubbles in a cured body, and the cured body with minimal bubbles may prevent the decrease of strength and decrease of surface roughness, etc. for such a silicone material.

Thus, Correction A to replace "curable" silicone composition with a silicone composition "curable at ambient temperature" falls within the scope of matters described in the patent specification and does not substantially enlarge or alter the scope of claims.

(2) As for Correction matter 2

Claim 1 before the correction only specifies that "each divided agent" is "included and kept in a depressurized inclusion body", whereas after the correction "each divided agent" is "filled in a container" and included in an inclusion body. Thus Correction matter 2 aims at restriction of the scope of claims.

Further, the patent specification has the following description:

"[0033] Each composition for subdivision prepared as above is divided and preferably

filled into a container. In the present invention, these divided compositions are maintained at reduced pressure. After filling into a container, it may be depressurized and thereafter preserved in an inclusion body, or after filling into a container, it may be maintained as is, and depressurized as necessary and preserved in an inclusion body. It is preferable, however, to maintain a depressurized state as possible during the preservation period. The inclusion body to be preserved under reduced pressure may include, for example, bag, bottle, and case. The inclusion body is not particularly limited as long as it has a structure capable of being depressurized."

"[0035] The container filled with a divided composition is not particularly limited but may include, for example, syringe, tube, etc. The syringe may be used preferably as a cartridge in a manner that adjacent two syringes are integrated and the composition comprising major components of (a) base polymer and (b) a crosslinking agent and the composition comprising major components of (a) base polymer and (c) catalyst for curing are respectively filled into the respective syringes."

"[0036] Depressurized preservation method may typically include: a method of putting the whole container into an inclusion body, depressurizing with a vacuum pump, and subjecting the inclusion body to heat sealing; a method of utilizing a chuck-type inclusion body; a method of putting the whole container into an inclusion body, and subjecting the inclusion body to vacuum packaging by use of a dedicated seal packaging machine; a method of putting the container into a compression bag equipped with a sealing tape and a check valve, closing the sealing tape and reducing pressure via the check valve with a suction pump; and a method of reducing pressure with vacuum in a dental clinic."

It is evident from these descriptions that each divided agent is filled into a container and further included and kept in a depressurized inclusion body. Thus, Correction matter 2, which replaces with "each divided agent is filled in a container and the container is included and kept in a depressurized inclusion body" is made within the scope of matters described in the patent specification and does not substantially enlarge or alter the scope of claims.

Additionally, regarding this Correction matter 2, the demandant argues that a target for sealing and keeping in a depressurized inclusion body is changed from "a silicone composition" before the correction to "a container" filled with the silicone composition, and thus the correction substantially alters the scope of the claims. (Aforesaid "No. 2 1.(1)")

However, the correction of Correction matter 2 does not change the fact that the object sealed in an inclusion body is "each divided agent". The correction of Correction matter 2 only specifies the sealed state to the effect that each divided agent is "filled in a container" and further sealed in a depressurized inclusion body. Thus, it cannot be said that the correction substantially alters the scope of the claims.

(3) As for Correction matter 3

Claim 2 before the correction did not specify at which of ambient temperature or a high temperature the silicone resin is curable, whereas after the correction it specifies that it is curable at ambient temperature. Thus Correction matter 3 aims at restriction of the scope of claims.

Further, as discussed in the above item (1), the correction to replace with "a

silicone composition curable at ambient temperature via an addition-type reaction" falls within the scope of matters described in the patent specification. Thus, Correction matter 3 is made within the scope of matters described in the patent specification and does not substantially enlarge or alter the scope of claims.

(4) Regarding a unit of claims

The correction according to the above Correction matter 3 is requested with respect to Claims 2 and 3 constituting a unit of claims.

3. Closing

As described above, the correction by the request for correction aims at the matter listed in the item (i) of the proviso to Article 134-2(1) of the Patent Act, and complies with the provision of Article 134-2(3) and Articles 126(4) to (6) of the Patent Act as applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act. Therefore, Claims [1] and [2, 3] after the correction should be accepted.

No. 4 Determination by the body about Reasons for invalidation

1. Inventions according to Claims 1 to 3

Since the request for correction is affirmed, the inventions according to Claims 1 to 3 of the Patent (hereinafter referred to as "Invention 1" etc.) are respectively specified by the matters recited in Claims 1 to 3 of the corrected scope of the claims attached to the written correction request as set forth below:

"[Claim 1] A method for preserving a divided agent to form a silicone composition that is curable at ambient temperature by mixing two or more divided agents and is to be cured by an addition-type reaction, each divided agent being filled in a container and the container being included and kept in a depressurized inclusion body during storage.

[Claim 2] A kit of separate packages for the formation of curable silicone composition, the kit consisting of a divided agent to form a silicone composition that is curable at ambient temperature by mixing two or more divided agents and is to be cured by an addition-type reaction, each divided agent being filled in a container and the container being sealed in a depressurized inclusion body during storage.

[Claim 3] The kit of separate packages of Claim 2, wherein the inclusion body is a bag."

2. Described matter of A1 and the invention described in A1

(1) Described matter of A1

A1 (European Patent Application Publication No. 0955328 Specification), a publication distributed before the priority date of the Patent, has the following descriptions:

A. "[0001] Our invention provides vacuum dispensable silicone compositions that are substantially free of air, methods for the preparation of such compositions, and cured silicone compositions formed therefrom."

B. "[0002] Silicones are widely used in the electrical and electronics industries as a result of their unique properties. Silicones exhibit low alpha particle emissions, very good moisture resistance, excellent electrical insulation, excellent thermal stability, and very high ionic purity. In particular, silicone encapsulants can improve the reliability of an electronic device by providing an effective barrier against environmental moisture,

UV radiation, ozone, and weathering.
[0003] Recent advances in semiconductor packaging, namely the development of chip scale or chip size packages, have created a critical demand for high performance vacuum dispensable silicone encapsulants. In addition to the desired properties of electronic grade silicone materials, such encapsulants must also be compatible with the new vacuum dispensing systems and possess the rheological properties required for flow around and/or under the silicon chip or die.
[0004] .... Conventional silicone compositions evolve copious amounts of air during vacuum dispensing. Low boiling components in the compositions, either initially present or later formed during storage, also contribute to gas evolution. The rapidly escaping gas bubbles cause foaming and splattering of the encapsulant, resulting in contamination of the exposed surface of the semiconductor device. An additional cleaning step is then required to remove encapsulant from the contaminated die surface. Moreover, extensive gas evolution produces voids in the encapsulant layer, resulting in incomplete underfill of the device. Contamination and residual voids become increasingly conspicuous as the complexity of the device increases and its dimensions decrease. In the fabrication of chip scale or chip size semiconductor packages, these encapsulation problems result in increased costs and reduced component reliability."

C. "[0005] Our invention provides a silicone composition which satisfies the need for a vacuum dispensable silicone encapsulant. We have discovered that the excessive outgassing characteristic of conventional addition-curable silicone compositions during vacuum dispensing is due to the presence of air and low molecular weight volatile components in the compositions. Moreover, we have overcome the outgassing problem and its deleterious effects, including contamination and void formation.
[0006] Specifically, our invention is a silicone composition comprising:
(A) 100 parts by weight of a polydiorganosiloxane containing an average of at least two silicon-bonded alkenyl groups per molecule;
(B) 10 to 100 parts by weight of an organopolysiloxane resin essentially consisting of (a)$R^3_2(CH_2=CH)SiO_{1/2}$ siloxane units, (b) $R^3_3SiO_{1/2}$ siloxane units, and (c) $SiO_{4/2}$ siloxane units wherein each R^3 is independently selected from monovalent hydrocarbon or monovalent halogenated hydrocarbon groups free of aliphatic unsaturation, the mole ratio of the combination of (a) and(b) units to (c) units is from 0.6:1 to 1.1:1 and the resin contains from 1 to 5 percent by weight of vinyl groups;
(C) an organohydrogenpolysiloxane having an average of at least three silicon-bonded hydrogen atoms per molecule in an amount sufficient to provide from one to three silicon-bonded hydrogen atoms per alkenyl group in components (A) and (B) combined;
(D) an adhesion promoter in an amount sufficient to effect adhesion of the composition to a substrate;
(E) a hydrosilylation catalyst in an amount sufficient to provide from 0.1 to 1000 parts per million of a platinum group metal based on the combined weight of components (A), (B), and (C); and
(F) a platinum catalyst inhibitor having a boiling point greater than 150°C at 0.10 MPa in an amount sufficient to retard curing of the composition at ambient temperature; and wherein the composition comprising components (A) through (F) is substantially free of air.

[0007] ....
[0008] Our invention further provides a multi-part silicone composition comprising components (A) through (F) specified above, wherein each part of the composition is substantially free of air and with the proviso that neither the polydiorganosiloxane nor the organopolysiloxane resin is present with the organohydrogen polysiloxane and the hydrosilylation catalyst in the same part.
[0009] Our invention also provides a method of preparing the silicone composition, comprising the steps of mixing components (A) through (F) delineated above and de-airing the mixture to produce a composition substantially free of air."

D. "[0010] The compositions of our instant invention are substantially free of air and contain only components that are nonvolatile under vacuum dispense conditions, which is typically performed at a pressure of 4,000 to 10,700 Pa. Compared to conventional silicone compositions, our silicone compositions exhibit extremely low outgassing during vacuum dispensing. The compositions can be vacuum dispensed with negligible or no contamination of unexposed die surfaces, which eliminates the need for an additional cleaning step in the fabrication of a chip scale package. Our silicone compositions produce uniform protective layers substantially free of voids. Moreover, the desired advantages of silicone materials for such applications are retained. ...
[0011] Component (A) of the present invention is a polydiorganosiloxane containing an average of at least two silicon-bonded alkenyl groups per molecule. Suitable alkenyl groups contain 2 to 6 carbon atoms and are exemplified by, but not limited to, vinyl, allyl, and 6-hexenyl. The alkenyl groups in component (A) may be located at terminal, pendant, or both terminal and pendant positions. The remaining silicon-bonded organic groups in component (A) are independently selected from monovalent hydrocarbon or monovalent halogenated hydrocarbon groups free of aliphatic unsaturation. ....
[0021] Component (C) of the present invention is an organohydrogenpolysiloxane having an average of at least three silicon-bonded hydrogen atoms per molecule and an average of no more than one silicon-bonded hydrogen atom per silicon atom. The silicon-bonded hydrogen atoms can be located at terminal, pendant, or at both terminal and pendant positions in the organohydrogenpolysiloxane. Component (C) is a homopolymer or a copolymer. The structure of the organohydrogenpolysiloxane can be linear, branched, or cyclic. The siloxane units present in component (C) may include $HR^4_2SiO_{1/2}$, $R^4_3SiO_{1/2}$ $HR^4SiO_{2/2}$, $R_2{}^4_2SiO_{2/2}$, $HSiO_{3/2}$, $R^4SiO_{3/2}$, and $SiO_{4/2}$ units. ....
[0033] Component (E) of our invention is a hydrosilylation catalyst comprising a platinum group metal or a compound containing such a metal that promotes the addition reaction of components (A) and (B) with component (C). These metals include platinum, rhodium, ruthenium, palladium, osmium, and iridium. Platinum and platinum compounds are preferred based on the high activity level of these catalysts in hydrosilylation reactions. ...."

E. "[0035] Mixtures of said components (A), (B), (C), (D) and (E) may begin to cure at ambient temperature. To obtain a longer working time or "pot life", the activity of the catalyst under ambient conditions is retarded or suppressed by the addition of a suitable inhibitor.

[0036] Component (F) of the present invention is a platinum catalyst inhibitor having a boiling point greater than 150°C at 0.10 MPa. The platinum catalyst inhibitor retards curing of the present compositions at ambient temperature, but does not prevent the composition from curing at elevated temperatures. In order to be effective in this invention, component (E) must be soluble in the composition. ....
[0037] Acetylenic alcohols constitute a preferred class of inhibitors, and 2-phenyl-3-butyn-2-ol is a particularly preferred inhibitor. Compositions containing these inhibitors generally require heating at 70°C or above to cure at a practical rate.
[0038] The platinum catalyst inhibitor is added to the present compositions in an amount sufficient to retard curing of the compositions at ambient temperature without preventing or excessively prolonging cure at elevated temperatures. This amount will vary widely depending on the particular inhibitor used, the nature and concentration of the hydrosilylation catalyst, and the nature of the organohydrogenpolysiloxane.
[0039] ...."

F. "[0044] The compositions of the instant invention are typically prepared by combining components (A) through (F) and, optionally a filler, in the stated proportions and then de-airing the composition. Mixing is accomplished by any of the techniques known in the art, such as milling, blending, and stirring, either in a batch or continuous process. The particular device is determined by the viscosity of the components and the final composition. Preferably, the hydrosilylation catalyst is added last at a temperature below 30°C to prevent premature curing of the composition and thus ensure adequate working time. Also, the components are preferably mixed under vacuum at a pressure of 3,400 to 16,900 Pa to minimize the inclusion of air in the composition.
[0045] Alternatively, the composition of the present invention is a multi-part composition comprising components (A) through (F) in two or more parts. The multi-part composition can contain any number of different parts containing different amounts of different ingredients, provided that neither the polydiorganosiloxane nor the organopolysiloxane resin is present with the organohydrogenpolysiloxane and hydrosilylation catalyst in the same part. In a typical method for preparing such a composition, a portion of the polydiorganosiloxane, a portion of the organopolysiloxane resin, the adhesion promoter, the hydrosilylation catalyst, and any filler or additives are mixed together to produce Part A and the remaining portions of the polydiorganosiloxane and resin, organohydrogenpolysiloxane, and platinum catalyst inhibitor are mixed together to produce part B. The individual parts of the multi-part composition are de-aired according to the method described below. Preferably, the components are packaged in such a manner that equal weight amounts of each package can be mixed to produce the compositions of this invention.
[0046] The one-part compositions and the individual parts of the multi-part composition must be thoroughly de-aired prior to use in a vacuum dispensing process. Preferably, de-airing is performed by passing the composition through a falling film evaporator at ambient temperature under a pressure of less than 1333 Pa and preferably under a pressure of 667 Pa. According to the preferred method, the composition passes through one or more slits in the head assembly into the vacuum chamber at a rate of 227 grams per minute. The slit forces the material into a thin ribbon having a high surface area and short diffusion path for air or other gases to escape. The ribbon falls through the vacuum chamber a distance of 0.6 m into a press pot. After all of the material has

fallen into the pot, the vacuum is maintained for at least fifteen minutes to ensure thorough removal of air. Air is then slowly readmitted into the system and the material is pressed out of the pot into suitable containers. For the purposes of the present invention, a composition de-aired according to the preceding method, which is further delineated in Example 1, or by any other method that produces an equivalent composition, is termed "substantially free of air". Different combinations of flow rate, pressure, vacuum chamber length, and temperature than those recited above can be used to produce the compositions of the present invention. The precise set of conditions required to produce compositions substantially free of air, as defined supra, can be determined by routine experimentation. An airless mixing technique known in the art should be used to combine the de-aired parts of the multi-part composition.
[0047] It is important to note that the composition of our invention is de-aired prior to introduction into the vacuum dispensing equipment. The vacuum created in the vacuum dispenser alone is not of a sufficient nature to produce the compositions of the present invention. As used herein, the term "de-airing" does not refer to removal of air during vacuum dispensing."

G. "[0049] The compositions of the present invention should be stored in sealed containers to prevent exposure to air and moisture. Preferably, the compositions are stored in foil bags that are heat sealed under vacuum. A preferred package is an aluminized polyethylene/polyester bag. Such a bag is commercially available from LPS Industries (Newark, New Jersey) under the trade name Vapor Flex(R)VF-52. The one part product of the present invention may be stored at room temperature for several weeks without any change in the properties of the cured encapsulant product. However, the shelf life of the compositions of this invention can be extended to several months by storing the mixtures at a temperature below 0°C. and preferably from -20 to -30°C. Individual sealed packages of the multi-part composition described above can be stored for over 6 months at ambient conditions without any deterioration in the performance of the composition produced upon their admixture.
[0050] The compositions of our invention are cured by heating at temperatures of 70 to 200°C, preferably 80 to 150°C, for a suitable length of time. For example, the compositions typically cure in two hours at 80°C and in fifteen minutes at 150°C."

H. "Example 1
[0054] This example demonstrates the preparation and packaging of a composition according to the present invention. A blend of an organohydrogenpolysiloxane and a platinum catalyst inhibitor was prepared by mixing 10.2 parts of a trimethylsiloxy-terminated dimethylmethylhydrogen siloxane containing an average of five $HMeSiO_{2/2}$ units and three $Me_2SiO_{2/2}$ units per molecule and having a viscosity of 4.8×10^{-3} Pa·s and 1.3 parts of 2-phenyl- 3-butyn-2-ol at 70°C for 20 minutes. A base was prepared by mixing 81.2 parts of fused silica having an average particle size of 4.5±0.5 micrometers; 73.4 parts of a dimethylvinylsiloxy terminated polydimethylsiloxane having an average DP of 830 and a viscosity of 55 Pa·s; 26.6 parts of a dimethylvinylsiloxy-terminated polydimethylsiloxane having an average degree of polymerization (DP) of 434 and a viscosity of 2 Pa·s; 44.4 parts of a resin essentially consisting of $(CH_3)_2CH_2=CHSiO_{1/2}$ units, $(CH_3)_3SiO_{1/2}$ units and $SiO_{4/2}$ units, wherein the mole ratio of total triorganosiloxane units to $SiO_{4/2}$ units is 0.7:1 and the resin

contains 2.0 weight percent of vinyl groups; ....
[0055] To the base was added the blend of the organohydrogenpolysiloxane and the inhibitor. Finally, 0.9 part of a platinum complex of 1,3-diethenyl-1,1,3,3-tetramethyldisiloxane was added to the mixture. The resulting composition was mixed until homogenous using a shear mixer. All mixing operations were carried out under a pressure of from 6773 Pa to 10,159 Pa except during the addition of components to the mixture.
[0056] The material was then transferred to a 19 L polypropylene pail and pumped into a falling film evaporation system. The vacuum chamber in the apparatus was maintained at a pressure of 667 Pa. The composition passed through two slits in the head assembly, each having a length of 38.1 mm and a width of 3.2 mm, into the vacuum chamber at a rate of 227 grams per minute. The two ribbons of material emerging from the head assembly fell a distance of 0.6 min to a press pot. After all of the material had fallen into the pot, the system was held under vacuum for an additional 15 minutes. Air was then slowly readmitted into the apparatus. The composition was mechanically pressed out of the bottom of the pot and withdrawn into polyethylene syringes (30 cm^3). Furthermore the syringes were placed in Vapor Flex(R)VF-52 aluminized polyethylene/polyester bags (LPS Industries, Newark, New Jersey) containing silica gel desiccant. The bags were heat sealed under vacuum and then stored in a freezer at -20°C."

I. "Example 2
[0057] This example demonstrates the effects of platinum catalyst inhibitors having different boiling points on the extent of outgassing for compositions dispensed under vacuum. A blend of each inhibitor and an organohydrogenpolysiloxane was prepared by mixing 1.3 parts of the inhibitor and 10.3 parts of the organohydrogenpolysiloxane used in Example 1. Four bases were prepared by mixing 82.1 parts of fused silica having an average particle size of 4.5 ± 0.5 micrometers, 100 parts of a vinyl-terminated polydimethylsiloxane having an average DP of 830 and a viscosity of 55 Pa·s; 44.9 parts of the resin used in example 1; and 2.6 parts of adhesion promoter (1). To each base was added one of the inhibitor-organohydrogenpolysiloxane blends. Finally, 0.9 part of a platinum complex of 1,3-diethenyl-1,1,3,3-tetramethyldisiloxane was added to each mixture. The resulting compositions were mixed until homogeneous using a shear mixer. All mixing operations were carried out under a pressure of 6773 Pa to 10,159 Pa except during the addition of components to the mixture.
[0058] A portion of the composition containing 2-phenyl- 3-butyn-2-ol and the entire amount of each of the other compositions were de-aired according to the method in example 1. The compositions were withdrawn into polyethylene syringes (30 cm^3) and the syringes were placed in Vapor Flex(R)VF-52 aluminized polyethylene/polyester bags (LPS Industries, Newark, New Jersey) containing silica gel desiccant. The bags were heat sealed under vacuum and then stored in a freezer at -20°C. The compositions were removed from the freezer just prior to use and allowed to warm to room temperature.
[0059] Each composition, including the composition not de-aired, was used to encapsulate an array of 30 dies mounted on a flexible circuit tape. Each die assembly consists of a silicon die (3 mm x 5 mm) and a polyimide tape separated by an elastomer pad or spacer. The composition was vacuum dispensed along three sides of each

silicon die. A waiting period of 1 to 2 minutes was observed to allow the material to wet the die. Encapsulant was then dispensed on the fourth side of each die. Approximately 0.03 grams of composition was dispensed per die. The extent of degassing for each composition was determined by visual inspection of the encapsulant during vacuum dispensing. The results are presented in Table I.

Table I

Platinum Catalyst Inhibitor	Boiling Point of Inhibitor, °C. (0.10 MPa)	Extent of Degassing[a]
2-Methyl-3-butyn-2-ol	104	4
3,5-Dimethyl-1-hexyn-3-ol	150	3
1-Ethynyl-1-cyclohexanol	180	2
2-Phenyl-3-butyn-2-ol	217	1
2-Phenyl-3-butyn-2-ol[b]	217	5

[a] 1 = no visible bubbling, no contamination of die;
2 = minor bubbling, minor contamination of die, no cleanup required;
3 = moderate bubbling, contamination of die, cleanup required;
4 = vigorous bubbling, contamination of die, voids, cleanup required;
5 = vigorous bubbling and foaming, gross contamination of die, voids, cleanup required.
[b]Composition not de-aired.

"

(2) The invention described in A1

A.(A) A1 describes the invention according to " vacuum dispensable silicone compositions that are substantially free of air" ([0001]).

(B) The silicone composition is a "multi-part type composition" that can "contain any number of different parts containing different amounts of different ingredients". "Individual parts" of "multi-part composition" pack components are packed so as to produce a composition when "each package is mixed " ([0045]).

(C) "multi-part composition" of A1 is

a silicone composition comprising: a polydiorganosiloxane component containing an average of at least two silicone-bonded alkenyl groups per molecule, wherein said alkenyl groups contain 2 to 6 carbon atoms such as vinyl, allyl, and 6-hexenyl ([0011]);

an organohydrogenpolysiloxane component having an average of at least three silicon-bonded hydrogen atom per molecule, and average of no more than one silicon-bonded hydrogen atom per silicon atom ([0021]); and

a component of platinum group metals or a compound including such a metal ([0033]), wherein the silicone composition containing such components is generally referred to as "an addition-curable silicone" (See, for example, paragraph [0008] of A20.). This composition is "cured by heating at a temperature of 70 to 200°C, preferably 80 to 150°C,for a suitable length of time" ([0050]).

(D) Further, this composition is stored "in a foil bag that is heat sealed under vacuum "

to prevent exposure to air and moisture ([0049]).
(E) "Individual parts" of "multi-part composition" are stored in a foil bag to form "individual sealed packages" ([0049]).

B. As seen above, regarding a method of storing a multi-part composition, A1 discloses an invention of:
"a method of storing individual parts of a multi-part composition in a heat-sealed foil bag under vacuum, wherein an addition-curable, vacuum-dispensable silicone composition substantially free of air is served for a multi-part composition, and the multi-part composition may contain any number of different parts containing different amounts of different ingredients, and the composition may be cured by mixing individual parts each of which is packed and heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time." (hereinafter referred to as "A1-1 invention".).

C. Further, regarding a package of a multi-part composition, A1 discloses an invention of:
"an individually-sealed package of a multi-part composition in a heat-sealed foil bag under vacuum, wherein an addition-curable, vacuum-dispensable silicone composition substantially free of air is served for a multi-part composition, and the multi-part composition may contain any number of different parts containing different amounts of different ingredients, and the composition may be cured by mixing the individual parts, each of which is packed and heating at a temperature of 70 to 200°C, preferably 80 to 150°C, for a suitable length of time." (hereinafter referred to as "A1-2 invention".).

D. Further, the demandant argues that A1 discloses ([0049]) that a composition should be stored in a sealed container to prevent exposure to air and moisture, and furthermore it is preferable to be stored in aluminized polyethylene/polyester bag, and the invention described in A1 should be found as such. (Aforesaid "No. 2 1. (2)C. (A)")

Further, A1 discloses in [0049] that "the compositions of the present invention should be stored in sealed containers to prevent exposure to air and moisture. Preferably, the compositions are stored in foil bags that are heat sealed under vacuum." It fails to disclose that the "foil bag" contains "sealed container". It is natural to recognize from this description that the "foil bag" is preferable as a "sealed container". Thus the demandant's allegation cannot be directly deduced from the description of A1.

E. On the other hand, the demandee argues that there is a matter of "include a platinum catalyst inhibitor having a higher boiling point than 150°C at 0.10 MPa in an amount sufficient to suppress the curing of the composition at ambient temperature" in the A1 invention. (Aforesaid "No. 2 2. (2)B. (A)")

In this regard, referring to the description of the patent specification, it discloses that a curable silicone composition may be mixed with "a reaction inhibitor" as an additive (paragraphs [0026] and [0028]).

The Invention 1 specifies "a silicone composition that is curable at ambient temperature by mixing two or more divided agents and is to be cured by an addition-type reaction" to specify that a curing temperature is "ambient temperature", however, it

does not at all specify whether or not to comprise a "reaction inhibitor".

To find the cited invention, it is sufficient to find an invention on the basis of necessary matters in comparison to the Invention from technical matters to be recognized from the description of cited reference. Thus it cannot always be said that the A1-1 invention and the A1-2 invention, which should be found in comparison to the Inventions 1 to 3 where it is not specified as to whether or not to comprise a reaction inhibitor, require the finding of matter regarding "platinum inhibitor". Even if the A1-1 invention and the A1-2 invention are found as in the demandee's allegation, it cannot be a difference between these inventions as to whether or not to include a reaction inhibitor.

3. Determination of Invention 1

(1) Technical significance of Invention 1 and the A1-1 invention

A. The patent specification discloses that a silicone material curable at ambient temperature

(A) is conventionally "used for the materials of heat-resistant paint, adhesives, coating materials, encapsulant for architecture, silicone rubber impression materials for dental use, soft lining materials for dental and denture uses" ([0002]), but has a problem that "the silicone material curable at ambient temperature tends to gradually entrain air from the gap of container during storage and cause air to be dissolved into a paste or a solution. Air once dissolved cannot be dissolved in a material in curing, and as a result it remains in a cured body as an air bubble. Further, the cured body entraining the air bubble causes various problems such as decreased strength of material itself, the surface roughness due to susceptibility of material surface to grinding, decreased transparency, and decreased air tightness." ([0003]).

"The inventors have finally found that the depressurized preservation of divided agents of each component for a silicone composition results in the silicone composition with minimal bubbles in a cured body, and the cured body with minimal bubbles may prevent a decrease of strength and decrease of surface roughness, etc., and completed the present invention" ([0004]).

(B) As for the effects on a silicone composition curable through the addition-type reaction, it is confirmed through the comparison of the results of Examples 1 to 3 and Comparative Examples 1 to 3 that "the average number of bubbles of cured body manufactured from the one stored under a reduced pressure according to the present invention is much less under three storage conditions than that of a cured body manufactured from the one stored at a normal pressure. Further, the tensile strength manufactured from the one stored under a reduced pressure is higher than that of a cured body manufactured from the one stored at a normal pressure under three conditions." ([0043]).

(C) It can be seen from them that Inventions 1 to 3 preserve a silicone composition curable at ambient temperature under a reduced pressure to avoid the inclusion of air since the air taken into the silicone composition during storage after filling container causes a problem of decrease of strength of materials.

B. On the other hand, regarding a silicone composition, A1 discloses

(A) "Recent advances in semiconductor packaging, namely the development of chip scale or chip size packages, have created a critical demand for high performance

vacuum dispensable silicone encapsulants", and "In addition to the desired properties of electronic grade silicone materials, such encapsulants must also be compatible with the new vacuum dispensing systems and possess the rheological properties required for flow around and/or under the silicon chip or die" ([0003]), "Conventional silicone compositions evolve copious amounts of air during vacuum dispensing. Low boiling components in the compositions, either initially present or later formed during storage, also contribute to gas evolution. The rapidly escaping gas bubbles cause foaming and splattering of the encapsulant, resulting in contamination of the exposed surface of the semiconductor device. An additional cleaning step is then required to remove encapsulant from the contaminated die surface. Moreover, extensive gas evolution produces voids in the encapsulant layer, resulting in incomplete underfill of the device. Contamination and residual voids become increasingly conspicuous as the complexity of the device increases and its dimensions decrease. In the fabrication of chip scale or chip size semiconductor packages, these encapsulation problems result in increased costs and reduced component reliability" ([0004]) and thus the inventors "have discovered that the excessive outgassing characteristic of conventional addition-curable silicone compositions during vacuum dispensing is due to the presence of air and low molecular weight volatile components in the compositions" ([0005]).

(B) Here, for example, as described in A27 ([0021]), stating that "the seal/filler 6 was coated by a dispenser in a certain amount on a gap surrounded by the semiconductor chip 1, the semiconductor chip attachment part 2, the adhesives 3, and the frame member 7, and subjected to vacuum immersion at a reduced pressure of 10 torr to seal and fill with the seal/filler 6 without including bubbles in a whole space including the bump 5. Meanwhile, the degassing of curable silicone composition used for seal/filler was observed. Thereafter, this was heated for 30 minutes at 150°C to cure the seal/filler 6." (underlined by the body.), it is a matter of common technical knowledge that "vacuum dispensing" is construed as meaning a process of coating a silicone composition as a filler on a semiconductor chip on a substrate by use of a dispenser, while dividing the composition under a reduced pressure. This is consistent with the description of A1, stating that "evolve copious amounts of air during vacuum dispensing. .... The rapidly escaping gas bubbles cause foaming and splattering of the encapsulant, resulting in contamination of the exposed surface of the semiconductor device." ([0004]), "which is typically performed at a pressure of 4,000 to 10,700 Pa" ([0010]. Body's note: "a pressure of 4,000 to 10,700 Pa" corresponds to about 0.04 to 0.11 atm.), "This example demonstrates the effects of platinum catalyst inhibitors having different boiling points on the extent of outgassing for compositions dispensed under vacuum." ([0057]).

(C) As described above, "vacuum dispensing" is a process of coating a silicone composition as a filler on a semiconductor chip on a substrate, while dividing the composition under "a reduced pressure". To solve the problem during this "vacuum dispensing", A1-1 invention uses a silicone composition "that is substantially free of air and contains only components that are nonvolatile under vacuum dispense conditions, which are typically at a pressure of 4,000 to 10,700Pa" ([0010]). In order to make it "substantially free of air", "individual parts of one-part composition and multi-part composition must be completely degassed before use in the vacuum dispensing process", and "Preferably, de-airing is performed by passing the composition through a falling film evaporator at ambient temperature under a pressure of less than 1333 Pa and

preferably under a pressure of 667 Pa. According to the preferred method, the composition passes through one or more slits in the head assembly into the vacuum chamber at a rate of 227 grams per minute. The slit forces the material into a thin ribbon having a high surface area and short diffusion path for air or other gases to escape. The ribbon falls through the vacuum chamber a distance of 0.6 m into a press pot. After all of the material has fallen into the pot, the vacuum is maintained for at least fifteen minutes to ensure thorough removal of air. Air is then slowly readmitted into the system and the material is pressed out of the pot into suitable containers" ([0046]).

This causes the following: "Compared to conventional silicone compositions, our silicone compositions exhibit extremely low outgassing during vacuum dispensing. The compositions can be vacuum dispensed with negligible or no contamination of unexposed die surfaces, which eliminates the need for an additional cleaning step in the fabrication of a chip scale package. Our silicone compositions produce uniform protective layers substantially free of voids. Moreover, the desired advantages of silicone materials for such applications are retained" ([0010]).

(D) Regarding a silicone composition for which this "vacuum dispensing" is conducted, "To ensure a longer working time or an usable time, the catalyst activity in an ambient condition is inhibited or suppressed by the addition of an appropriate inhibitor" ([0035]). This inhibitor "suppresses the curing of the composition of the present invention at ambient temperature, but does not prevent the curing of this composition at a high temperature" ([0036]). "The composition including these inhibitors requires heating at approximately 70°C or higher to cure at a practical speed" ([0037]).

(E) Further, regarding a silicone composition "substantially free of air", it is supposed that "the composition of the present invention should be stored in a sealed container to prevent the exposure to air and moisture. Preferably, the compositions are stored in foil bags that are heat sealed under vacuum. A preferred package is an aluminized polyethylene/polyester bag". Therefore, "Individual sealed packages of the multi-part composition described above can be stored for over 6 months at ambient conditions without any deterioration in the performance of the composition produced upon their admixture" ([0049]).

(F) Further, Example 1 and Example 2 compared the results of "composition de-aired" and "composition not de-aired". Regarding "composition not de-aired", it was confirmed that the assessment of the result was "vigorous bubbling and foaming, gross contamination of die,voids. Cleaning necessary.".

(G) In view of these facts, the A1-1 invention stores a silicone composition used for "vacuum dispensing" that is to be coated by dividing under "a reduced pressure", and makes the silicone composition "substantially free of air" to avoid bubbling, and makes the composition "to be cured by heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time" to avoid curing at ambient temperature. Further, in the A1-1 invention, such a silicone composition is "stored in a foil bag that is heat sealed under vacuum" because air present in the silicone composition before filling into a container discharges air to scatter the composition and contaminate an exposed surface of a semiconductor device, and thus the air in the silicone composition is once de-aired so that the silicone composition may be used for "vacuum dispensing" that does not discharge air, and stored "under vacuum" to maintain the status.

(2) Comparison between Invention 1 and the A1-1 invention

A. It can be said that the "individual parts each of which is packed" and "contain any number of different parts containing different amounts of different ingredients" of the A1-1 invention correspond to the "divided agent that is divided into two or more" of Invention 1.

Further, "addition-curable" of the A1-1 invention corresponds to "to be cured by an addition-type reaction" of Invention 1.

Consequently, "a vacuum-dispensable silicone composition substantially free of air is served for a multi-part composition, and the multi-part composition may contain any number of different parts containing different amounts of different ingredients, and the composition may be cured by mixing individual parts each of which is packed and heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time" of the A1-1 invention is identical to "a silicone composition that is curable at ambient temperature by mixing two or more divided agents and is to be cured by addition-type reaction" of Invention 1 in that they are both "silicone compositions that are curable by mixing two or more divided agents and are to be cured by an addition-type reaction".

B. With regard to the matter of "storage" of Invention 1, the patent specification discloses that "The one subjected to heat sealing under a reduced pressure in a bag and a cartridge were stored for 6 months in a bath at a room temperature in a normal pressure (Example 1, Comparative Example 1), in a thermostat bath at 25°C (Example 2, Comparative Example 2), and in a bath programmed to maintain 15°C for 12 hours and 30°C for 12 hours per one day cycle (Example 3, Comparative Example 3). Thereafter, a mixing chip was attached to a cartridge and extruded with dispenser to knead two pastes, and the number of bubbles in air bubbles per one gram was counted. In Examples and Comparative Examples, five respective samples were measured under the same condition and the average value was regarded as an average number of bubbles. The result is shown in Table 1." ([0040]), "The result of Table 1 shows that the average number of bubbles in a cured body manufactured from the one stored under a reduced pressure of the present invention in a silicone composition to be cured by an addition-type reaction was much less for three storage conditions as compared to the cured body manufactured from the one stored at a normal pressure. Further, tensile strength of the cured body manufactured from the one stored under a reduced pressure was higher than that of a cured body manufactured from the one stored at a normal pressure under three storage conditions. In view of this, it can be seen that the preservation method of the present invention causes effects." ([0043]).

It can be seen from these descriptions that the "storage" of Invention 1 is construed as meaning the ability to maintain without affecting the performance of a composition over a period of about "6 months".

On the other hand, in view of the fact that A1 discloses in paragraph [0049] that "Individual sealed packages of the multi-part composition described above can be stored for over 6 months at ambient conditions without any deterioration in the performance of the composition produced upon their admixture", it can be said that the "storage" of the A1-1 invention is also construed as meaning the ability to maintain without adversely affecting the performance of composition for a period of six months or more as similarly to "storage" of Invention 1. Thus "storage" of the A1-1 invention

corresponds to "storage" of Invention 1.

C. The "foil bag" of the A1-1 invention in which individual parts of multi-part composition are "stored" under vacuum corresponds to a depressurized "inclusion body" in which a divided agent of Invention 1 is "stored".

Further, it can be seen from the following description of the patent specification that

"Examples 1 to 3, Comparative Examples 1 to 3

.... The pastes of the above (A) and (B) were filled in a cartridge equipped with two syringes in each amount of 25 gram, and sealed with a piston and silicone O-ring. This cartridge was put into a bag consisting of laminate film of 15 μm-thick nylon-6 film at the outside and 60 μm-thick polyethylene film at the inside, and subjected to heat sealing while reducing a pressure to 270 mmHg." (paragraph [0039]) that "included and kept" of Invention 1 includes heat-sealing a bag in which a divided agent is contained while reducing pressure. It can thus be said that "stored in a heat-sealed foil bag under vacuum" of the A1-1 invention corresponds to "included and kept into a depressurized inclusion body" "during storage" of Invention 1.

D. Therefore, Invention 1 and the A1-1 invention have in common that they are both directed to "a method for preserving a divided agent to form a silicone composition that is curable by mixing two or more divided agents and is to be cured by an addition-type reaction, each divided agent being preserved in a depressurized inclusion body during storage", and they are different from each other in the following points:

<<Difference 1>>

Regarding silicone composition to be stored, Invention 1 specifies a silicone composition "curable at ambient temperature", whereas the A1-1 invention specifies a vacuum-dispensable silicone composition "substantially free of air" and "curable by mixing the individual parts each of which is packed and heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time".

<<Difference 2>>

Regarding the preservation method, Invention 1 specifies that "each divided agent is filled in a container and the container is included and kept in a depressurized inclusion body", whereas the A1-1 invention specifies that "individual parts of a multi-part composition are stored in a heat-sealed foil bag under vacuum".

(3) First, Difference 1 is considered in the following.

A. (A) As discussed in the above item "(1) A.(C)", Invention 1 stores a silicone composition curable at ambient temperature under a reduced pressure to avoid the inclusion of air, since it takes air during storage after filling into a container and the air causes a problem such as a decrease in strength of material.

On the other hand, as discussed in the above item "(1)B.(G)", the A1-1 invention makes a silicone composition to be stored free of air for the use in "vacuum dispensing", which is to be coated by dividing under "a reduced pressure", and makes the composition "to be cured by heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time" to avoid curing at ambient temperature, and stores under a reduced pressure to maintain the state.

The silicone composition of the A1-1 invention is made "substantially free of

air" to allow for "vacuum dispensing", and "curable by heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time". Thus it must be said that the A1-1 invention would not motivate us to daringly replace such a silicone composition with the one without the limitation of "vacuum-dispensable and substantially free of air" but initiating curing at "ambient temperature"; i.e., curable at "ambient temperature".
(B) On the contrary, unless it is "vacuum-dispensable and substantially free of air", voids generate due to gas generation, and encapsulants scatter due to rapidly escaping gas bubbles, and cause a problem of contamination of the exposed surface of a semiconductor device, and there is also a disincentive for the curing to begin at ambient temperature when replaced with one curable at "ambient temperature" and results in the failure to "ensure a longer working time or a usable time".
(C) First of all, in the A1-1 invention, the method for storing "under vacuum" stores a silicone composition "substantially free of air" and to be selected for "vacuum dispensing" and "to be cured by heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time", whereas it can be said that there is no necessity to select the storage "under vacuum" for a silicone composition curable at "ambient temperature" that cannot be subjected to "vacuum dispensing" in view of the description of A1 ([0035]), stating that a mixture lacking a reaction inhibitor "…may begin to cure at ambient temperature. To obtain a longer working time or "pot life", the activity of catalyst under ambient condition is retarded or suppressed by the addition of a suitable inhibitor".
(D) Therefore, it cannot be said that it was easily conceivable by a person skilled in the art to replace a silicone composition "vacuum-dispensable and substantially free of air" and "curable by heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time" of the A1-1 invention with a silicone composition "curable at ambient temperature" without the limitation of "vacuum-dispensable and substantially free of air".

B. The demandant argues about Difference 1 according to the difference of silicone composition as in the following. Consideration is given to the argument.
(A) The demandant argues that Invention 1 is directed to a method for preserving a curable silicone composition where each divided agent is filled in a container, characterized in that the container is sealed and preserved in a depressurized inclusion body, whereas it has nothing to do with the preservation method as to whether the curing of the composition is conducted at ambient temperature or under heating condition, and thus Difference 1 is not a substantial difference. (Aforesaid "No. 2 1.(2)B.(A)")

However, as discussed in the above item "A.(C)", a method for storing "under vacuum" utilizes for "vacuum dispensing" a silicone composition "substantially free of air" and "to be cured by heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time". Therefore, implementation of the curing of silicone composition that has been subjected to "vacuum dispensing" is relevant to the method for storing "under vacuum".

Further, as discussed in the above "A.(A) to (D)", A person skilled in the art could not easily conceive of replacing "the one to be cured by heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time" with the one to be

cured at "ambient temperature" in the silicone composition of the A1-1 invention. Thus the demandant's allegation of Difference 1 not being a substantial difference because it does not have a direct correlation with the preservation method as to which condition the curing of composition was implemented, at ambient temperature or under heating, is not acceptable.

(B) Further, the demandant argues that it can be recognized from the matters described in A2 to A6 and A17 to A21 that a two-part type silicone composition curable by an addition-type reaction at ambient temperature was a matter of common technical knowledge or well-known technique for a person skilled in the art, and it was easily conceivable by a person skilled in the art to apply this to the A1 invention to overcome Difference 1 and achieve Invention 1. (Aforesaid "No. 2 1. (2)B. (B)")

A2 to A5 and A17 disclose a silicone composition to be cured especially as an impression materials for dental use, A6 discloses a silicone composition to be cured in two steps that is rapidly curable at a room temperature to assume an adhesive state, A18 discloses a silicone composition that is not curable but works as a thickener to a silicone oil, A19 discloses a silicone composition comprising N-heterocyclic silane as an adhesion promotor to a substrate such as metal and glass, A20 discloses a silicone composition comprising an amine stabilizer, and A21 discloses a silicone composition that requires "heating at 150°C for four hours" to obtain a cured body. None of them shows, however, that the silicone composition is usable for "vacuum dispensing" that requires the suppression of curing at ambient temperature to ensure a longer working time or a usable time. Therefore, even if a two-part type silicone composition curable by an addition-type reaction at ambient temperature was a matter of common technical knowledge or a well-known technique for a person skilled in the art, it cannot be directly deduced from the matters described in A2 to A6 and A17 to A21 that the common technical knowledge or well-known technique shall be applied to the A1-1 invention according to the preservation method of silicone composition used for "vacuum dispensing".

Therefore, the demandant's allegation of it being conceivable by a person skilled in the art to apply the common technical knowledge or well-known technique described in A2 to A6 and A17 to A21 to overcome Difference 1 and achieve Invention 1 is not acceptable.

(C) Further, the demandant argues that "the mixing of two parts does not lead to the instant curing and loss of fluidity of silicone composition, but a two-part type silicone composition that is curable at ambient temperature through an addition-type reaction and used as a resin encapsulant of semiconductor disclosed in A21 has sufficient fluidity to be used for sealing a semiconductor resin by mixing them without a platinum catalyst inhibitor. In the two-part type silicone composition curable at ambient temperature through an addition-type reaction and used as an encapsulant for a manufacturing process of semiconductors, it is not at all essential to include an addition-type reaction inhibitor such as a platinum catalyst inhibitor, and thus there is no disincentive to replace a heat-curable type silicone composition of the A1 invention with an ambient temperature-curable type silicone composition of Invention 1". (Aforesaid "No. 2 1. (2)B. (C)")

However, even if a silicone composition in which two parts are mixed together does not instantly cure, it cannot be said that the fluidity allows for "vacuum dispensing". Further, A21 is intended for "coating or potting" and "protection of a

junction part or wire" ([0002]). Thus it cannot always be said that it has sufficient fluidity to be used for "vacuum dispensing". Furthermore, A21 discloses that the silicone composition is "heated at 150°C for four hours" (Example 1) to obtain a cured body. In view of this, it cannot be said to be a two-part type silicone composition to be cured at ambient temperature.

Therefore, the body cannot accept the demandant's allegation that there is no disincentive to replace the heat-curable silicone composition of the A1-1 invention with an ambient temperature-curable silicone composition, on the basis of the fact that the mixing of two parts does not lead to the instant curing and loss of fluidity of silicone composition and it is not essential that the silicone composition of A21 include the reaction inhibitor.

(D) Further, as exemplified in A21 to A29, the demandant argues that the silicone composition to be cured by an addition-type reaction by heating and the silicone composition to be cured by an addition-type reaction at ambient temperature are both widely used in the technical field of the manufacture of semiconductors, and it is only a matter of material selection or a design matter which to select, and a person skilled in the art who reads the A1 invention could have easily conceived of replacing with the silicone composition "curable at ambient temperature by an addition-type reaction", which was a matter of common technical knowledge or well-known technique commonly used as an encapsulant of semiconductor resin sealing, with ordinary creativity, starting from the A1 invention. (Aforesaid "No. 2 1. (2)B. (D)")

However, none of A21 to A26, A28, and A29 describes a silicone composition capable of being used for "vacuum dispensing". Further, A27 discloses that a silicone composition is "subjected to vacuum immersion at a reduced pressure of 10 torr" between a semiconductor chip and an attachment part. The silicone composition of A27 is to be cured "by heating at 150°C for 30 minutes", and thus is a heat-curable silicone composition as similar to the A1-1 invention. Therefore, even if a silicone composition "curable by an addition-type reaction at ambient temperature" was a matter of common technical knowledge or well-known technique commonly used as an encapsulant for semiconductor resin sealing, it cannot be directly deduced from the matters described in A21 to A29 that the silicone composition "curable by an addition-type reaction at ambient temperature" can be applied to the A1-1 invention according to the method for preserving a silicone composition to be used for "vacuum dispensing".

Therefore, the body cannot accept the demandant's allegation that a person skilled in the art could have easily conceived of Invention 1 by replacing the A1 invention with a silicone composition "curable at ambient temperature by an addition-type reaction", which was a matter of common technical knowledge or well-known technique commonly used as an encapsulant for semiconductor resin sealing in view of the description of A21 to A29.

(E) Further, the demandant argues that there is a general problem to save as many steps as possible and increase efficiency, and it is only a matter of design or material selection as to which type of silicone composition to be cured through an addition-type reaction is used, an ambient temperature-curable type or a heat-curable type, and it can be said that a person skilled in the art could have been motivated to use an ambient temperature-type as a silicone composition curable at an addition-type reaction by saving the step of mixing platinum catalyst inhibitor to save as many steps as possible and increase efficiency, and thus could have easily conceived of the Invention 1 by replacing a heat-

curable type with an ambient temperature-curable type, starting from the A1 invention. (Aforesaid "No. 2 1.(2)B.(E)")

It is not established nor directly inferred, however, that a silicone composition "curable at ambient temperature" usable for "vacuum dispensing" was a matter of common technical knowledge or well-known technique. As aforementioned, it is neither only a design matter nor a matter of material selection as to which silicone composition to be cured by an addition-type reaction is used, an ambient temperature-type or a heat-curable type.

Further, even if there were always a general problem to increase the efficiency by saving as many steps as possible, as discussed in the above item A. (C), there is a disincentive that a composition "begins to cure at ambient temperature" and results in the failure to "ensure a longer working time or an usable time" when it is replaced with the one to be cured at "ambient temperature" by saving the step of mixing a platinum catalyst inhibitor. Thus it was not easily conceivable by a person skilled in the art to do so in the A1-1 invention.

Therefore, the body cannot accept the demandant's allegation that a person skilled in the art could have conceived of Invention 1, starting from the A1 invention with a motivation to increase the efficiency by saving as many steps as possible.

(F) Furthermore, the demandant argues that the description of paragraphs [0035] to [0039] of A1 is directed to a one-part type silicone composition, not a multi-part type silicone composition, and thus A1 fails to describe that a platinum catalyst inhibitor is an essential component for imparting fluidity in a vacuum dispensing process with respect to a multi-part type silicone composition, and thus there is no disincentive to eliminate the platinum catalyst inhibitor and change from a heat-curable type to an ambient-temperature type. (Aforesaid "No. 2 1. (2)B.(F)")

However, in view of the description of [0003] of A1 ("Recent advances in semiconductor packaging, namely the development of chip scale or chip size packages, have created a critical demand for high performance vacuum dispensable silicone encapsulants. In addition to the desired properties of electronic grade silicone materials, such encapsulants must also be compatible with the new vacuum dispensing systems and possess the rheological properties required for flow around and/or under the silicon chip or die."), it shall obviously apply to the case of a multi-part type to require fluidity properties necessary for flowing around and/or beneath a silicone chip or a die of a silicone encapsulant used for the mounting of semiconductors. Further, A1 discloses in [0045] that "the composition of the present invention is a multi-part composition including the components (A) to (F) in two or more parts. The multi-part composition may include a plurality of different parts containing different amounts of different ingredients. .... A part of polydiorganosiloxane, a part of organosiloxane, an adhesive promoter, a hydrosilylation catalyst, and an optional filler or additive are mixed together to form Part A, whereas the remaining parts of polydiorganosiloxane and resin, organohydrogenpolysiloxane, and a platinum catalyst inhibitor are mixed together to form Part B." This allegedly causes a platinum catalyst inhibitor of the component (F) to be included into "Part B". In view of this, the function and the action of one-part type silicone composition described in [0035] to [0039] of A1 obviously corresponds to the multi-part silicone composition of the A1-1 invention.

Accordingly, the body cannot accept the demandant's allegation to the effect that regarding a multi-part type silicone composition, A1 fails to describe a platinum catalyst

inhibitor as an essential component to impart fluidity during vacuum dispensing operation, and thus there is no disincentive to eliminate the platinum catalyst inhibitor and change from a heat-curable type to an ambient temperature-type.

C. Therefore, Difference 1 is a substantial difference, and the constitution according to Difference 1 of Invention 1 was not easily conceivable by a person skilled in the art on the basis of the A1-1 invention.

(4) Subsequently, Difference 2 is considered in the following.
A. As discussed in the above item "(1)B.(G)", in the A1-1 invention, a silicone composition is "stored in a heat-sealed foil bag under vacuum" as a target for preservation because air present in the silicone composition before filling into a container is discharged so that the silicone composition may maintain a status that can be used for "vacuum dispensing" without discharging air.

Consequently, to maintain a status usable for "vacuum dispensing" may be achieved by "storing in a heat-sealed foil bag under vacuum". Thus there is no motivation to daringly fill in a container and store in a foil bag.

B. The demandant argues in the aforesaid "No. 2 1. (2)C. (B)" that A1 ([0056]) describes a method of filling a composition in a syringe, and putting into a polyethylene/polyester bag, and subjecting the bag to heat sealing under a reduced pressure and storing in a refrigerator, and this preservation method is easily applicable to the packages of individual parts of multi-part type composition.

Indeed, A1 discloses in [0056] the working example in which, although a silicone composition is one-part type, the composition is sealed in a polyethylene syringe, and the syringe is placed in an aluminizd polyethylene/polyester bag including silica gel, and the bag is subjected to heat sealing under vacuum and stored. In this example, to put into a bag including silica gel is "intended to prevent the exposure to air and moisture" ([0049]). To put into a syringe and further put into a silica gel is construed as meaning the prevention of the mixture of silica gel and composition in a bag.

On the other hand, it is not considered that the inclusion body of Invention 1 contains a silica gel. Further, as discussed in the above item "(1)A.(C)", Invention 1 prevents air from being taken into a silicone composition, because bubbles of air taken into a silicone composition during storage cause a problem such as a decrease in strength of materials. Invention 1 fails to describe the necessity of measures to moisture to solve the problem. Thus, it cannot be said that there is a necessity to include a silica gel in an inclusion body. Therefore, even if "the individual parts of multi-part composition" of the A1-1 invention may be placed into a bag including silica gel, it cannot be said that a person skilled in the art could have easily conceived of saving silica gel to obtain the one where "each divided agent is filled in a container and the container is included and kept in a depressurized inclusion body" as recited in Invention 1.

Therefore, the allegation of the demandant described above cannot be accepted.

C. Therefore, Difference 2 is also a substantial difference, and the constitution according to Difference 2 of Invention 1 was not easily conceivable by a person skilled

in the art on the basis of the A1-1 invention.

(5) Further, regarding a silicone composition to be cured at ambient temperature by an addition-type reaction, the cured body manufactured from the one stored under a reduced pressure of Invention 1 causes effects of having "much lower average number of bubbles compared to the cured body manufactured from the one stored at an ambient temperature", and further having "a higher tensile strength as compared to the cured body manufactured from the one stored at ambient temperature" ([0043] of the patent specification). The effects are different from the effect of reducing foaming from a composition or the contamination of die in the A1-1 invention,and would fall out of the range of the expectation of a person skilled in the art.

Further, none of A2 to A32 suggests the fact.

(6) As seen above, the Invention 1 differs from the A1-1 invention in Difference 1 and Difference 2, and thus Invention 1 is not identical to the A1-1 invention, nor can it be said that Difference 1 and Difference 2 were easily conceivable by a person skilled in the art. Thus Invention 1 was not easily conceivable by a person skilled in the art on the basis of the A1-1 invention.

4. Determination of Invention 2

(1) Comparison between Invention 2 and the A1-2 invention

A. As discussed in aforesaid "3. (2)A.", it can be said that the "individual parts each of which is packed" and "contain any number of different parts containing different amounts of different ingredients" of the A1-2 invention correspond to "divided agent that has been divided into two or more" of Invention 2, and the "addition-curable" of the A1-2 invention corresponds to "to be cured by an addition-type reaction" of Invention 2.

Further, "a vacuum-dispensable silicone composition substantially free of air is served for a multi-part composition, and the multi-part composition may contain any number of different parts containing different amounts of different ingredients, and the composition may be cured by mixing individual parts, each of which is packed and heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time" of the A1-2 invention is identical to "a silicone composition curable at ambient temperature by mixing two or more divided agents and is to be cured by an addition-type reaction" of Invention 2 in that they are both "silicone compositions that are curable at by mixing two or more divided agents and are to be cured by an addition-type reaction".

B. As discussed in aforesaid "3. (2)B." it can be said that the "storage" of the A1-2 invention corresponds to the "storage" of Invention 2.

Further, as discussed in aforesaid "3. (2)C.", the "foil bag" of the A1-2 invention in which individual parts of multi-part composition are "stored" under vacuum corresponds to a depressurized "inclusion body" in which a divided agent of Invention 2 is "stored". It can thus be said that "stored in a heat-sealed foil bag under vacuum " of the A1-2 invention corresponds to "included and kept in a depressurized inclusion body" "during storage" of Invention 2.

C. The matter of the "kit of separate packages" of Invention 2 is said to be "the one

where a container filled with two or more divided agents is included in a depressurized inclusion body" in view of the description of Invention 2, stating that "a kit of separate packages for the formation of curable silicone composition, each divided agent being filled in a container and the container being sealed in a depressurized inclusion body during storage".

In this regard, the demandant argues that "kit of separate packages" of the case is "a container filled with two or more divided agents", and should be construed as meaning the container where "each divided agent being filled in a container and the container being sealed in a depressurized inclusion body during storage", not meaning the article where "container filled with two or more divided agents" and "depressurized inclusion body (bag)" are combined with each other. (Aforesaid "No. 2 1. (3)")

As the demandant argues, however, supposing the "kit of separate packages" to be "a container filled with divided agents that has been divided into two or more", the matter of "a container is included into a depressurized inclusion body" is not encompassed into the "kit of separate packages". Invention 2 is not an invention of the preservation method to "include into a depressurized inclusion body", but a product invention according to "kit of separate packages". Thus it is natural to recognize that the specification of "each divided agent being filled in a container and the container being sealed in a depressurized inclusion body during storage" of Invention 2 is directed to a "kit of separate packages". Thus, the demandant's allegation is not acceptable.

D. The "package" of the A1-2 invention means packing with a foil bag so that "individual parts of a multi-part composition are stored in a heat-sealed foil bag under vacuum". Thus the "package" is identical to the "kit of separate packages" where a container filled with "each divided agent" is packed with "a depressurized inclusion body" and "stored," in that they are both "packed products".

Further, the "package" of the A1-2 invention is intended for the formation of an addition-curable silicone composition, and thus it is used "for the formation of an addition-curable silicone composition".

E. Consequently, Invention 2 and the A1-2 invention have in common that they are both "products to be packed for the formation of curable silicone composition, the products forming a silicone composition that is curable at by mixing two or more divided agents and is to be cured by an addition-type reaction, each divided agent being preserved in a depressurized inclusion body during storage", and they are different from each other in the following points:

<<Difference 1'>>

Regarding a silicone composition, Invention 2 specifies a silicone composition "curable at ambient temperature", whereas the A1-1 invention specifies a "vacuum-dispensable" silicone composition "substantially free of air" and "curable by mixing the individual parts each of which is packed and heating at a temperature of 70 to 200°C, preferably 80 to 150°C for a suitable length of time".

<<Difference 2'>>

Regarding the packed product for the formation of curable silicone composition, Invention 2 specifies the "kit of separate packages" where "each divided agent is filled in a container and the container is included and kept in a depressurized inclusion body", whereas the A1-2 invention specifies the "package" where "individual parts of a multi-

part composition are stored in a heat-sealed foil bag under vacuum".

(2) Difference 1'

Difference 1' is substantially the same matter as "Difference 1" between Invention 1 and the A1-1 invention, as discussed in the aforesaid "3.(2)D.".

Further, Difference 1 is a substantial difference as discussed in the aforesaid "3.(3)", and was not easily conceivable on the basis of the A1-1 invention.

Consequently, Difference 1', which is a difference between Invention 2 and the A1-2 invention, is a substantial difference, and was not easily conceivable on the basis of the A1-2 invention.

(3) As seen above, Invention 2 differs from the A1-2 invention in Difference 1'. Thus, without considering Difference 2', Invention 2 is not the A1-2 invention, nor was it easily conceivable by a person skilled in the art on the basis of the A1-2 invention.

5. Determination of Invention 3

(1) Invention 3 includes all the matters specifying the invention of Invention 2, and further specifies that "the inclusion body is a bag".

Invention 3 and the A1-2 invention are different from each other in the following Difference 3' as well as the above Difference 1' and Difference 2'.

<<Difference 3'>>

Regarding an inclusion body, that of Invention 3 is a "bag", whereas that of the A1-2 invention is "foil bag".

(2) As is discussed in the above item "4.(2)", Difference 1' is a substantial difference, and Invention 2 is not identical to the A1-2 invention, nor was it easily conceivable by a person skilled in the art on the basis of the A1-2 invention. Thus, Invention 3 including all the matters specifying the invention of Invention 2 is not identical to the A1-2 invention, nor was it easily conceivable by a person skilled in the art on the basis of the A1-2 invention.

6. Summary

Therefore, Inventions 1 to 3 do not correspond to Article 29(1)(iii) of the Patent Act, nor are they made in violation of the provision of Article 29(2) of the Patent Act. Consequently, the patents do not correspond to the provision of Article 123(1)(ii) of the Patent Act.

No. 5 Conclusion

As seen above, the reasons for invalidation as the demandant argues may not be grounds for invalidating the patents according to Inventions 1 to 3.

The costs in connection with the trial shall be borne by the demandant under the provisions of Article 61 of the Code of Civil Procedure which is applied mutatis mutandis in the provisions of Article 169(2) of the Patent Act.

Therefore, the trial decision shall be made as described in the Conclusion.

December 7, 2017

Chief administrative judge: WATANABE, Toyohide
Administrative judge: INOUE, Shigeo
Administrative judge: TANIHANA, Masayuki