Patent Right	Date	August 4, 2022	Court	Intellectual Property High Court, First Division
	Case number	2021 (Gyo-Ke) 10090		
- A case in which a request for correction in a trial for patent invalidation related to an invention titled "Spray product and spray method" was not found to aim to "restrict the claims" (Article 134-2, proviso to paragraph (1), item (i) of the Patent Act) and the JPO Decision was rescinded since there is an error in its determination concerning the correction requirements.				

Case type: Rescission of Trial Decision to Maintain
Results: Granted
References: Article 134-2, proviso to paragraph (1), item (i) of the Patent Act
Related rights, etc.: Patent Application No. 2018-509670
Trial decision: Invalidation Trial No. 2020-800014

Summary of the Judgment

1. The Plaintiff requested a trial for invalidation of the patent in question (hereinafter referred to as the "Patent") related to an invention titled "Spray product and spray method," for which the Defendant has a patent right. The Defendant requested corrections of the Patent (hereinafter referred to as the "Correction"). The Japan Patent Office (hereinafter referred to as the "JPO") approved the Correction and then determined that "the request for the trial in question (hereinafter referred to as the "Trial") is groundless."

2. In this judgment, the court determined as summarized below that it is not found that corrected matters 1 and 2 in the Correction do not aim to "restrict the claims" (Article 134-2, proviso to paragraph (1), item (i) of the Patent Act); there is an error in the determination concerning correction requirements by the decision in question made by the JPO (hereinafter referred to as the "JPO Decision"); and the court rescinded the JPO Decision.

(1) It is found that corrected matters 1 and 2 added the statements related to actions of "having decreased mucous membrane irritation" or "decreasing mucous membrane irritation" to the statements of "噴射製品[spray product]" as defined in Claim 1 before the Correction and "噴射方法[spray method]" as defined in Claim 3 before the Correction respectively.

In other words, according to the statements related to "reduction of mucous membrane irritation" in the descriptions in question (hereinafter referred to as the

"Descriptions"), it is found that the Descriptions disclosed the following: the function and effect of "reduction of mucous membrane irritation" are shown by the structure "wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher" as defined in Claim 1 before the Correction or the structure "wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle is 0.6 or higher" as defined in Claim 3 before the Correction. On the other hand, the Descriptions have no statements or suggestions that even in cases where the structures as defined in Claims 1 and 3 before the Correction were used, there are cases where the function and effect of "reduction of mucous membrane irritation" are not shown.

Then, the statements related to the actions of "having decreased mucous membrane irritation" or "decreasing mucous membrane irritation" that were added by corrected matters 1 and 2 only stated the function and effect shown by the structure as defined in Claims 1 and 3 before the Correction. Therefore, it cannot be found that corrected matters 1 and 2 narrowed down the claims related to the inventions as defined in Claims 1 and 3 before the Correction.

(2) Consequently, it cannot be found that corrected matters 1 and 2 aim to "restrict the claims" (Article 134-2, proviso to paragraph (1), item (i) of the Patent Act).

The JPO Decision contains an error in the determination concerning the correction requirements of the Correction and this error in the determination was caused by error in finding of the summary of the invention related to Claims 1 through 3 of the claims of the Patent, and therefore, the JPO Decision should be rescinded.

Judgment rendered on August 4, 2022
2021 (Gyo-Ke) 10090, Case of seeking rescission of the JPO decision
Date of conclusion of oral argument: May 26, 2022

Judgment

Plaintiff: Fumakilla Limited

Defendant: Earth Corporation

Main text

1. The decision made by the Japan Patent Office (JPO) on June 21, 2021, concerning the case of Invalidation Trial No. 2020-800014, shall be rescinded.
2. The Defendant shall bear the court costs.

Facts and reasons

No. 1 Claim

Same as paragraph 1 of the main text.

No. 2 Outline of the case

1. Outline of procedures at the JPO

(1) The Defendant filed a patent application for an invention titled "Spray product and spray method" for which the international application date was March 31, 2017 (Patent Application No. 2018-509670; priority date: March 31, 2016 (hereinafter referred to as "Priority Date 1") and November 25, 2016 (hereinafter referred to as "Priority Date 2"); priority country: Japan; hereinafter, the application is referred to as the "Application") and obtained a patent right registration (Patent No. 6539407; number of claims: 4; hereinafter the patent is referred to as the "Patent") on June 14, 2019 (Exhibits Ko 14 and 61).

(2) The Plaintiff filed a request on February 14, 2020, for a trial for patent invalidation (Invalidation Trial No. 2020-800014; hereinafter the trial is referred to as the "Trial") related to the patent for Claims 1 through 3 of the Patent (Exhibit Ko 44).

The Defendant requested corrections of Claims 1 through 3 in the claims of the Patent as of June 29, 2020 (hereinafter referred to as the "Correction") (Exhibit Ko 46).

The JPO approved the Correction and then made the decision that "the request for the Trial is groundless" (hereinafter referred to as the "JPO Decision") on June 21, 2021. A certified copy of the decision was served to the Plaintiff on July 1, 2021.

(3) The Plaintiff filed this lawsuit to seek rescission of the JPO Decision on July 30, 2021.

2. Statements of the claims

(1) At the time of patent registration (Before the Correction)

The statements in Claims 1 through 3 in the claims when the Patent was registered are as stated below (Exhibit Ko 14).

[Claim 1]

A spray product filled with an insect repellent composition containing an insect repellent component and formed with a spray nozzle for spraying the insect repellent composition (except in the case of containing a propellant);

wherein the insect repellent composition contains 10% by mass or more of a volatilization suppressive component (except in the case where the volatilization suppressive component is glycerin) that has a vapor pressure of 2.5 kPa or lower at 20°C in the insect repellent composition in order to suppress volatilization after spraying the insect repellent composition;

wherein the insect repellent component is at least one component selected from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate;

wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher;

and wherein 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 50μm or larger.

[Claim 2]

The spray product is the spray product stated in Claim 1, which is a pump product comprised of a pump container filled with the insect repellent composition and an actuator attached to the pump container and formed with the spray nozzle.

[Claim 3]

A spray method to spray an insect repellent composition containing an insect repellent component using a spray product (except in the case of containing a propellant) filled with the insect repellent composition and formed with a spray nozzle for spraying the insect repellent composition;

wherein the insect repellent composition contains 10% by mass or more of a volatilization suppressive component (except in the case where the volatilization suppressive component is glycerin) that has a vapor pressure of 2.5 kPa or lower at

20°C in the insect repellent composition in order to suppress volatilization after spraying the insect repellent composition;

wherein the insect repellent component is at least one component selected from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate;

and wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle is 0.6 or higher and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 50μm or larger.

(2) After the Correction

The Claims 1 through 3 in the claims of the Patent after the Correction are stated as follows (hereinafter the invention related to Claim 1 is referred to as "Invention 1," etc. based on the Claim number and Inventions 1 through 3 are collectively referred to as the "Invention" in some cases; the underlined parts are the parts corrected by the Correction; Exhibit Ko 46).

[Claim 1]

A spray product filled with an insect repellent composition containing an insect repellent component and formed with a spray nozzle for spraying the insect repellent composition (except in the case of containing a propellant);

wherein the insect repellent composition contains 10% by mass or more of a volatilization suppressive component (except in the case where the volatilization suppressive component is glycerin) that has a vapor pressure of 2.5 kPa or lower at 20°C in the insect repellent composition in order to suppress volatilization after spraying the insect repellent composition;

wherein the insect repellent component is at least one component selected from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate;

wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher;

wherein 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 50μm or larger;

and thereby <u>having decreased mucous membrane irritation</u>.

[Claim 2]

The spray product is the spray product stated in Claim 1, which is a pump product comprising a pump container filled with the insect repellent composition and an actuator to which the pump container is attached and on which the spray nozzle is formed.

[Claim 3]

A spray method to spray an insect repellent composition containing an insect repellent component using a spray product (except in the case of containing a propellant) filled with the insect repellent composition and formed with a spray nozzle for spraying the insect repellent composition;

wherein the insect repellent composition contains 10% by mass or more of a volatilization suppressive component (except in the case where the volatilization suppressive component is glycerin) that has a vapor pressure of 2.5 kPa or lower at 20°C in the insect repellent composition in order to suppress volatilization after spraying the insect repellent composition;

wherein the insect repellent component is at least one component selected from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate;

and a spray method to spray the insect repellent composition so that the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle is 0.6 or higher and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 50μm or larger; and

thereby decreasing mucous membrane irritation.

3. Summary of the grounds for the JPO Decision

The grounds for the JPO Decision are as stated in the attached written decision (copy). The JPO approved the Correction and then decided concerning Inventions 1 through 3 that none of the following grounds alleged by the Plaintiff had grounds: Grounds for Invalidation 1 (lack of novelty for which an invention related to a pump product named "服にスプレー スキンベープミストナチュラル ＵＶカット [Spray on cloth, Skin Vape Mist Natural UV Cut]" (Manufacturing lot No. 8F2C1A; packaging lot No. 8G2KA; Exhibits Ko 1 and 5) that was publicly known to be worked before Priority Date 1 (hereinafter referred to as "Exhibit Ko 1 Product") serves as the primary prior art); Grounds for Invalidation 2 (lack of novelty for which an invention related to a pump product named "天使のスキンベープミストプレミアム２００ｍＬ [Angel Skin Vape Mist Premium 200mL]" (Manufacturing lot No. 8F881A; Exhibits

Ko 5 and 8) that was publicly known to be worked before Priority Date 2 (hereinafter referred to as "Exhibit Ko 8 Product") serves as the primary prior art); Grounds for Invalidation 3 (violation of enablement requirements); and Grounds for Invalidation 4 (violation of clarity requirements).

From among the above, the summary of Grounds for Invalidation 1 is as stated below.

(1) "Publicly Worked Invention 1-1" and "Publicly Worked Invention 1-3"

The JPO Decision found that samples of Exhibit Ko 1 Product were transferred at least to posters of customer reviews for "Ａｍａｚｏｎ Ｖｉｎｅ 先取りプログラム[Amazon Vine]" before Priority Date 1 and then, found the following "Publicly Worked Invention 1-1" and "Publicly Worked Invention 1-3" (hereinafter collectively referred to as "Publicly Worked Invention 1") based on Exhibit Ko Product 1 and statements in Exhibits Ko 1, 2, and 5.

A. Publicly Worked Invention 1-1

An invention of "A spray product filled with an insect repellent composition containing an insect repellent component and formed with a spray nozzle for spraying the insect repellent composition (except in the case of containing a propellant);

wherein the insect repellent composition contains 36.545% by mass of water, for which a vapor pressure at 20°C is 2.3366 kPa, in the insect repellent composition;

wherein the insect repellent composition is p-menthane-3,8-diol;

wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 0.80;

wherein 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 236.27μm; and

the spray product is a pump product comprised of a container filled with the insect repellent composition and a trigger pump attached to the container and formed with the spray nozzle."

B. Publicly Worked Invention 1-3

An invention of "A spray method to spray an insect repellent composition containing an insect repellent component using a spray product (except in the case of containing a propellant) filled with the insect repellent composition and formed with a spray nozzle for spraying the insect repellent composition;

wherein the insect repellent composition contains 36.545% by mass of water, for which a vapor pressure at 20°C is 2.3366 kPa, in the insect repellent composition;

wherein the insect repellent composition is p-menthane-3,8-diol;

wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 0.80; and

wherein 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 236.27μm."

(2) Common features and differences between Invention 1 and Publicly Worked Invention 1-1

Common features and differences between Invention 1 and Publicly Worked Invention 1-1 found by the JPO Decision are stated below.

A. Common features

"A spray product filled with an insect repellent composition containing an insect repellent component and formed with a spray nozzle for spraying the insect repellent composition (except in the case of containing a propellant);

wherein the insect repellent composition contains 10% by mass or more of a component (except glycerin), for which a vapor pressure at 20°C is 2.5 kPa or lower, in the insect repellent composition;

wherein the insect repellent composition is p-menthane-3,8-diol;

wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 0.6 or higher; and

wherein 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 50μm or lager."

B. Differences

(Difference 1)

Concerning an insect repellent composition, Invention 1 contains a volatilization suppressive component in order to suppress volatilization after spraying; on the other hand, it is not clear whether Publicly Worked Invention 1-1 contains a volatilization suppressive component.

(Difference 2)

Concerning the spray product, in Invention 1, the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of a sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle is

adjusted to 0.6 or higher and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 50μm or larger; on the other hand, it is not clear whether Publicly Worked Invention 1-1 is adjusted in that way or not.

(Difference 3)

Concerning the spray product, in Invention 1, mucous membrane irritation has been decreased; on the other hand, in Publicly Worked Invention 1-1, it is not clear whether mucous membrane irritation has been decreased or not.

(3) Common features between Invention 1 and Publicly Worked Invention 1-1

A. Differences 2 and 3

(A) Invention 1 was invented based on the following facts: as a result of study into the cause of mucous membrane irritation in cases where an insect repellent component is contained in the insect repellent composition, it was found that some of the sprayed insect repellents do not adhere to the application points, such as skin, hair, etc., but reach a more distant point (e.g., at a distance of 30cm from a spray nozzle) beyond the application distance (e.g., at a distance of 15 cm from the spray nozzle) and float; at such a distant point, the particle diameter is smaller than the particle diameter at the application distance and, as a result, particles that are smaller in size are more easily aspirated and irritate the mucosa membranes; and therefore, "if the spray product is adjusted in consideration of not only the particle diameter at the application distance, but also the particle diameter ratio at the point exceeding the application point so that the particle diameter ratio at each point becomes the pre-determined value or higher, even if an insect repellent that tends to irritate mucous membranes is contained, the mucous membrane irritation is decreased" ([0006]). If it is a spray product wherein "the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of a sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher and 50% average particle diameter r_{30} is adjusted to 50μm or larger," it is identified that "it is a spray product that has decreased mucous membrane irritation."

(B) On the other hand, even if Publicly Worked Invention 1-1 or any of Exhibits Ko 1 through 38 is examined, it is impossible to derive a technical idea that even if an insect repellent component that tends to irritate mucous membranes is contained, it becomes a spray product that has decreased mucous membrane irritation by focusing on the particle diameter rate (r_{30} / r_{15}) and adjusting the particle diameter rate (r_{30} / r_{15}) of a sprayed insect repellent composition to 0.6 or higher, and by focusing on the 50%

average particle diameter r_{30} and adjusting 50% average particle diameter r_{30} to 50μm or larger; and it is not found that the technical idea was well-known art at the time of Priority Date 1.

Therefore, even if Publicly Worked Invention 1-1 contains an insect repellent component that tends to irritate mucous membranes, it is not found that Publicly Worked Invention 1-1 was adjusted so that the particle diameter rate (r_{30} / r_{15}) is 0.6 or higher by focusing on the particle diameter rate (r_{30} / r_{15}), and 50% average particle diameter r_{30} is 50μm or larger by focusing on the 50% average particle diameter r_{30} in order to create a spray product that has decreased mucous membrane irritation. When the particle diameter rate (r_{30} / r_{15}) and the 50% average particle diameter r_{30} were measured from the perspective of the technical idea, it was merely found that the particle diameter rate (r_{30} / r_{15}) fell under 0.6 or higher and the 50% average particle diameter r_{30} fell under 50μm.

Consequently, it is not found that Publicly Worked Invention 1-1 was recognized as a spray product that has decreased mucous membrane irritation by adjusting the particle diameter rate (r_{30} / r_{15}) to 0.6 or higher and the 50% average particle diameter r_{30} to 50μm or larger. It cannot be said that Publicly Worked Invention 1-1 contained such a technical idea.

Therefore, Differences 2 and 3 are considered to be substantial differences.

B. Difference 1

(A) Concerning "a volatilization suppressive component in order to suppress volatilization after spraying" in Invention 1, the descriptions attached to the application form of the Application (hereinafter the descriptions are referred to as the "Descriptions"; Exhibit Ko 14) stated as follows: "The insect repellent composition preferably contains a volatilization suppressive component, for which the vapor pressure at 20°C is 2.5 kPa or lower in order to suppress volatilization after spraying, in addition to the insect repellent component. This will suppress the volatilization of sprayed insect repellent composition and it is hard for particle diameter to be decreased in size. The volatilization suppressive component is not specifically limited. For example, a volatilization suppressive component is ... at least one component selected from the group consisting of water. If said components are contained as volatilization suppressive components, volatilization of the sprayed insect repellent composition is more easily suppressed and even if it is sprayed to a range exceeding the application site (e.g., at a distance of 30cm from the spray nozzle), it is hard for the particle diameter to be decreased in size." ([0014]), "... the content of the suppressive volatilization components is preferred to be 10% by mass or higher of the insect repellent

composition ... . If the content of the suppressive volatilization components is less than 10% by mass, the spray product may not be fully able to fulfill the effects of containing the suppressive volatilization components." ([0015]).

Therefore, it is understood that if the insect repellent composition "contains 10% by mass or more of a volatilization suppressive component that has a vapor pressure of 2.5 kPa or lower at 20°C in the insect repellent composition in order to suppress volatilization after spraying," volatilization of the sprayed insect repellent composition becomes more easily suppressed, and based on the fact that even if it is sprayed to a point at a distance of 30cm from the spray nozzle, which is in a range exceeding the application site, it is hard for the particle diameter to be decreased in size, Invention 1 states "the insect repellent composition contains 10% by mass or more of a volatilization suppressive component that has a vapor pressure of 2.5 kPa or lower at 20°C in the insect repellent composition in order to suppress volatilization after spraying" as particulars for identifying the invention.

It is true that Publicly Worked Invention 1-1 contains water. However, since Exhibit Ko 2, which was examined when finding Publicly Worked Invention 1-1, states that water is added as a "solvent," it is different from Invention 1 in terms of the purpose of adding water, and therefore, it is not found that water was recognized as a volatilization suppressive component to suppress volatilization after spraying.

(B) In addition, in consideration of the matters as stated in A. above, it is understood that the following facts form a unified technical idea: "by containing a volatilization suppressive component to suppress volatilization after spraying" (particulars for identifying the invention of Invention 1 related to Difference 1); "by adjusting the particle diameter rate (r_{30} / r_{15}) to 0.6 or higher" and "by adjusting 50% average particle diameter r_{30} to 50μm or larger" (particulars for identifying the invention of Invention 1 related to Difference 2); and thereby creating "a spray product that has decreased mucous membrane irritation" (particulars for identifying the invention of Invention 1 related to Difference 3).

Also from this perspective, it cannot be found that because water is contained in Publicly Worked Invention 1-1, the following technical idea was recognized: the water acts as "a volatilization suppressive component to suppress volatilization after spraying"; "by adjusting the particle diameter rate (r_{30} / r_{15}) to 0.6 or higher" and "by adjusting 50% average particle diameter r_{30} to 50μm or larger"; and thereby creating "a spray product that has decreased mucous membrane irritation."

In addition, even though examining any of Exhibits Ko 1 through 38, none of them supports that said technical idea was recognized concerning the fact that water is

contained in Publicly Worked Invention 1-1.

(C) Based on the above, Difference 1 is also considered to be a substantial difference.

C. Summary

Based on the above, Invention 1 is not identical to Publicly Worked Invention 1-1 and therefore, it is not an invention that was publicly known to be worked before Priority Date 1.

(4) Invention 2

Invention 2 directly cited Invention 1 and limits it by including a pump container and actuator. Therefore, Invention 2 also falls under what is stated in (2) and (3) above, and therefore, it is not an invention that was publicly known to be worked before Priority Date 1 in the same way.

(5) Common features and differences between Invention 3 and Publicly Worked Invention 1-3

Common features and differences between Invention 3 and Publicly Worked Invention 1-3 found by the JPO Decision are stated below.

A. Common features

"A spray method to spray an insect repellent composition containing an insect repellent component using a spray product (except in the case of containing a propellant) filled with the insect repellent composition and formed with a spray nozzle for spraying the insect repellent composition;

wherein the insect repellent composition contains 10% by mass or more of a component (except glycerin), for which a vapor pressure at 20°C is 2.5 kPa or lower, in the insect repellent composition;

wherein the insect repellent composition is p-menthane-3,8-diol; and wherein particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle is 0.6 or higher and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle is 50μm or larger."

B. Differences

(Difference 1)

Concerning an insect repellent composition, Invention 3 contains a volatilization suppressive component in order to suppress volatilization after spraying; on the other hand, it is not clear whether Publicly Worked Invention 1-3 contains a volatilization suppressive component.

(Difference 2)

Concerning the spray method, Invention 3 is a spray method wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 50μm or larger; on the other hand, it is not clear whether Publicly Worked Invention 1-3 sprays as stated above.

(Difference 3)

Concerning the spray method, in Invention 3, mucous membrane irritation is decreased; on the other hand, in Publicly Worked Invention 1-3, it is not clear whether mucous membrane irritation is decreased or not.

(6) Common features between Invention 3 and Publicly Worked Invention 1-3

Publicly Worked Invention 1-3 was approved based on the fact that the use method of Publicly Worked Invention 1 was explained in Exhibit Ko 1 that "Please keep a distance of approximately 10cm from clothes and spray it thoroughly over the cloth." Although Publicly Worked Invention 1-1, which is an invention of an article, and Publicly Worked Invention 1-3, which is an invention of a method, are in different categories of invention, technical matters identified in both inventions are the same. Therefore, Differences 1 through 3 between Invention 3 and Publicly Worked Invention 1-3 and Differences 1 through 3 between Invention 1 and Publicly Worked Invention 1-1 as described in (2) B. above are substantially the same.

Based on the above, the same matters as stated in (3) above apply to Differences 1 through 3 between Invention 3 and Publicly Worked Invention 1-3, and therefore, Publicly Worked Invention 1-3 is not considered to be an invention of a spray method wherein the technical idea in Invention 3 was recognized.

Consequently, Invention 3 is not an invention that was publicly known to be worked before Priority Date 1.

(omitted)

No. 4 Judgment of this court

1. Statement in the Descriptions

(1) There are the following statements in the Descriptions (Exhibit Ko 14) (for Tables 1 through 3 that are cited in the following statements, see the attachment).

A. [Technical field]

[0001]

The present invention relates to a spray product and a spray method. More particularly, the present invention relates to a spray product and a spray method that are less irritating to mucous membranes such as the nose and throat of a user when its content, an insect repellent composition, is sprayed.

[Background art]

[0002]

Conventionally, the insect repellent, containing N,N-diethyl- m-toluamide (Deet), is known. However, Deet cannot be used for infants of less than 6 months old in terms of safety due to skin absorption, and its use frequency is limited for children less than 12 years old. Therefore, an insect repellent combined with 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate, and other components instead of Deet is examined (Patent Documents 1 through 3).

[Problems to be solved by the invention]

[0004]

However, when the insect repellent containing the insect repellent component instead of Deet is sprayed as a pump product or aerosol product, the sprayed particles tend to irritate mucous membranes such as the nose and throat of the user or persons near the user. As a result, the user, etc. tends to feel a sense of discomfort with his/her mucous membranes or to cough. Incidentally, Deet that has been used has less mucous membrane irritation than the insect repellent component. For this reason, insect repellents containing Deet hardly cause problems related to mucous membrane irritation.

[0005]

The present invention was made in consideration of the previous problems and aims to provide a spray product and spray method that have decreased mucous membrane irritation although an insect repellent component that tends to irritate mucous membranes, such as the nose, throat, etc. of users is contained.

B. [Means of solving problems]

[0006]

The present inventors have intensively studied the cause of mucous membrane irritation when the insect repellent component is contained in the insect repellent composition, and have obtained the following findings. In other words, some of the sprayed insect repellents do not adhere to the application site, such as skin, hair, etc., but reach a point (e.g., at a distance of 30cm from a spray nozzle) beyond the application distance (e.g., at a distance of 15 cm from the spray nozzle) and float. At such a distant

point, the particle diameter is smaller than the particle diameter at the application distance. As a result, particles that have decreased in size tend to be aspirated and irritate the mucous membranes. Then, the present inventors took into consideration not only the particle diameter at an application distance, but also the particle diameter at a point exceeding the application site, found that a spray product wherein the particle diameter ratio at each point is adjusted to the pre-determined value or higher can decrease mucous membrane irritation and can solve the problem even when combined with an insect repellent component that tends to irritate mucous membranes, and completed the present invention.

[0007]

A spray product of the present invention to solve the aforementioned problem is a spray product filled with an insect repellent composition containing an insect repellent component and formed with a spray nozzle for spraying the insect repellent composition; wherein the insect repellent component is at least one component selected from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate; wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of a sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher; and wherein 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 50μm or larger.

[0008]

In addition, a spray method in the present invention to solve the aforementioned problem is a spray method to spray an insect repellent composition containing an insect repellent component using a spray product filled with the insect repellent composition and formed with a spray nozzle for spraying the insect repellent composition; wherein the insect repellent component is at least one component selected from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate; wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher.

C. [Effects of the invention]

[0009]

According to the present invention, it is possible to provide a spray product and a

spray method that has decreased mucous membrane irritation although an insect repellent component that tends to irritate mucous membranes, such as the nose, throat, etc. of users is contained in the insect repellent composition.

D. [Mode for embodying the invention]

[0010]

<Spray product>

A spray product, which is an embodiment of the present invention, is a spray product filled with an insect repellent composition containing an insect repellent component and formed with a spray nozzle for spraying the insect repellent composition. In addition, the spray product of the embodiment includes at least one component selected from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate. Furthermore, the spray product of the embodiment is adjusted so that the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of a sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher. In addition, the spray product of the present embodiment is characterized in that the particle diameter ratio at the time of spraying is adjusted to be in a specific range. For this reason, other configurations (e.g., the shape of the spray product, a variety of physical properties, such as other components, composition, internal pressure of containers, etc.) are required to be within the range of the particle diameter ratio and not particularly limited. Therefore, in the following detailed description, structures other than the insect repellent component and the particle diameter ratio are all examples.

[0011]

(First Embodiment)

In this embodiment, a case in which a spray product is a pump product will be described as an embodiment of a spray product. The spray product of the present embodiment is a pump product comprised of a pump container filled with the insect repellent composition and an actuator attached to the pump container and formed with the spray nozzle.

[0012]

- Insect repellent composition

The insect repellent composition is content to fill a pump vessel and it contains an insect repellent component to repel insects. The insect repellent component of the present embodiment includes at least one component selected from the group consisting

of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate. In addition to unsanitary insects, such as mosquitoes, black flies, stable flies, house dust mites, bedbugs, etc., these insect repellent components can preferably repel annoying insects, such as chironomids, and sandflies, etc. Meanwhile, when these insect repellent components are continuously micronized over time after being sprayed, they generally tend to irritate mucous membranes, such as the nose, throat, etc., of the user or a person near the user (hereinafter also collectively referred to as "users, etc."). As a result, the users, etc. tend to feel a sense of discomfort with their mucous membranes or to cough. It is hard for this problem to occur with other insect repellent components and it is a problem unique to 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate. However, even if the spray product of this embodiment includes a component that tends to irritate mucous membranes, since, as stated later, the particle diameter ratio of the sprayed insect repellent composition is adjusted to be in the pre-determined range, it is difficult to irritate mucous membranes of users, etc.

[0013]

The content of the insect repellent component is not particularly limited. As an example, the content of the insect repellent component is preferably to be 5% by mass or more in the insect repellent composition. On the other hand, it is preferable for the content of the insect repellent component to be 50% by mass or lower, and more preferable to be 20% by mass or lower in the insect repellent composition. When the content of the insect repellent component is less than 5% by mass or lower, the spray product may not be able to fully fulfill the insect repellent effects. On the other hand, when the content of the insect repellent component exceeds 50% by mass, the usability of the spray product tends to decrease more than increase in expected effects. When a single insect repellent component is used and the content is adjusted to be 5% by mass or more, the mucous membrane irritation tends to be stronger than when a plurality of insect repellent components are used in combination. In this embodiment, it is more likely to show the reduction of mucous membrane irritation when a single insect repellent component is used.

[0014]

The insect repellent composition preferably contains, in addition to the insect repellent component, a volatilization suppressive component, for which the vapor pressure at 20°C is 2.5 kPa or lower in order to suppress volatilization after spraying. This will suppress the volatilization of sprayed insect repellent composition and it is

hard for particle diameter to be decreased in size. The volatilization suppressive component is not specifically limited. For example, the volatilization suppressive component can be at least one component selected from the group consisting of 1,3-butylene glycol, propylene glycol, dipropylene glycol, glycerin, polyethylene glycol, polypropylene glycol, and other glycols; glycerin fatty acid ester and other fatty acid esters; palm oil and other vegetable oils; liquid paraffin; and water. If said components are contained as volatilization suppressive components, volatilization of the sprayed insect repellent composition is more easily suppressed and even if it is sprayed to a range exceeding the application site (e.g., at a distance of 30cm from the spray nozzle), it is hard for the particle diameter to be decreased in size.

[0015]

When containing the volatilization suppressive component, the content of the volatilization suppressive component is not specifically limited. For example, it is preferable for the content of the volatilization suppressive component to be 10% by mass or more, and it is more preferable to be 15% by mass or more in the insect repellent composition. If the content of the suppressive volatilization components is less than 10% by mass, the spray product may not be fully able to fulfill the effects of containing the suppressive volatilization components.

[0016]

In addition, as long as the effect of the present embodiment is not inhibited, optional ingredients that have been combined with the insect repellent composition may be combined as necessary. For example, the optional ingredients can be insect repellent components other than the aforementioned insect repellent component; solvents other than the aforementioned volatilization suppressive component; non-ionic surfactants, anionic surfactants, cationic surfactants, butylated hydroxytoluene, and other antioxidants; disodium edetate, citric acid, ascorbic acid, and other stabilizing agents; talc, silicic acid, and other inorganic powders; microbicide (fungicide), air refresher, fragrance (perfume), dye, pH adjuster, texture imparting agent, UV absorption inhibitor, etc.

[0017]

Other insect repellent components can be, for example, phenothrin, N,N-diethyl-m-toluamide (Deet), dimethyl phthalate, dibutyl phthalate, 2-ethyl-1,3-hexanediol, di-n-plopylisocinkomeronate, p-dichlorobenzene, di-n-butyl succinate, carane-3,4-diol, capric acid diethylamide, n-propylacetanilide, β-naphthol, camphor, plant essential oil, etc. A plant essential oil can be, for example, eucalyptus oil, citronella oil, lemongrass oil, geranium oil, cinnamon leaf oil, pimento tree oil, clove oil, thyme oil, or other oils;

thymol, carvacrol, eugenol, limonene, or other single terpenes, etc.

[0018]

Solvents can be, for example, ethanol, isopropyl alcohol, and other lower alcohols; acetone, hexane, and diethyl ether.

[0019]

- Pump container

Returning to the description of the entire spray product, the insect repellent composition is filled into a pump container. The pump container is not specifically limited. For example, the pump container is nearly a cylindrical container formed with an opening on the top. The opening is a filling port to fill the container with insect repellent composition. After it is filled with the insect repellent composition, it is closed with an actuator, which is described later.

[0020]

The pump container materials are not specifically limited. Materials of the pump container can be, for example, polyethylene terephthalate, polypropylene, polyethylene, and other synthetic resins.

[0021]

- Actuator

The actuator is a component for closing the opening of the pump container and for spraying the insect repellent composition that fills the pump container. The actuator includes a valve mechanism for taking out the insect repellent composition filling the pump container, a stem mechanism for actuating the valve mechanism, and a spray component that is linked to the stem mechanism and sprays the insect repellent composition, which is taken out by the valve mechanism. The spray component has a spray nozzle for spraying the insect repellent composition. In addition, the spray component has a trigger unit operated by the user.

[0022]

When the user operates the trigger unit of the spray product of the present embodiment, the stem mechanism and valve mechanism are operated to take out the insect repellent composition from the pump container and to spray it from the spray nozzle of the spray component. The insect repellent composition to be sprayed from the spray nozzle is adjusted to be the pre-determined particle diameter and is sprayed in mist form.

E. [0023]

It is preferred for the insect repellent composition that is sprayed by the spray product of the present embodiment to be adjusted so that the particle diameter ratio (r_{30}

/ r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle becomes 0.6 or higher and it is preferred to be adjusted to 1.0 or more. In the present embodiment, a distance of 15 cm from the spray nozzle is assumed to be a distance when the user of the spray product sprays at an application site (skin, hair, etc.). In addition, in the present embodiment, a distance of 30 cm from the spray nozzle is assumed to be a distance when the sprayed insect repellent composition does not adhere to the application site but reaches a further distance from the application site. At such a distant point, it was considered that a conventional insect repellent composition tends to have a smaller particle diameter and to irritate the mucous membranes of users, etc. However, the spray product of the present embodiment is adjusted so that the particle diameter ratio (r_{30} / r_{15}) is 0.6 or higher. For this reason, the particle diameter of the sprayed insect repellent composition remains the same at a distance of 30cm from the spray nozzle. As a result, the spray product may reduce mucous membrane irritation although the specific insect repellent component that tends to irritate mucous membranes is contained. In addition, the particle diameter of the sprayed insect repellent composition and the particle diameter ratio (r_{30} / r_{15}) can be measured using a laser diffraction particle size measurement device (LDSA - 1400A; MicrotracBEL Corp.).

[0024]

As described above, it is only required for the spray product of the present embodiment to be adjusted so that the particle diameter ratio (r_{30} / r_{15}) of the sprayed insect repellent composition becomes 0.6 or higher and the method of adjusting the particle diameter ratio to be within the above range is not specifically limited. For example, it is only required for the particle size ratio (r_{30} / r_{15}) of an insect repellent composition to be adjusted by adjusting the formulation of the insect repellent composition (e.g., type and content of each ingredient, presence or absence and content of repellent compositions, etc.), shape and dimensions of the actuator (e.g., size, form, etc. of a spray nozzle), or a variety of physical properties, such as spray volume per unit time (spray speed), spray pressure, etc. For example, the shape of the actuator can be a trigger type, finger-pump type, etc. The spray nozzle size of these actuators can be φ0.1 to 1.0mm, and there can be a plurality of spray nozzles. The inner diameter of the dip tube can be 1 to 10mm, and preferably 1 to 5mm, and more preferably 1 to 3mm. The spray volume per spray can be 0.05 to 3.0mL, preferably 0.05 to 1.5mL, and more preferably 0.05 to 0.5mL. The spray angle is preferably between 10 to 80 degrees, and more preferably 20 to 70 degrees. In the case of an accumulator pump, the spray volume

per second can be 0.1 to 5.0g. The spray pressure can be 0.01 to 0.50N when measured at a distance of 15cm using a digital force gauge (DS2-2N; Imada Co., Ltd.).

[0025]

In addition, it is preferred for the insect repellent composition sprayed by the spray product of the present embodiment to have 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle of 50μm or larger, and more preferably 100μm or larger. Further, 50% average particle diameter r_{15} is preferably 300μm or less, more preferably 200μm or less, and even more preferably 150μm or less. If 50% average particle diameter r_{15} is less than 50μm, the mucous membranes of users, etc. tend to be irritated.

[0026]

It suffices for the insect repellent composition sprayed by the spray product of the present embodiment to have 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle of 50μm or larger, but more preferably 70μm or larger, and even more preferably 100μm or larger. Further, 50% average particle diameter r_{30} is preferred to be 300μm or less, more preferably 200μm or less, and even more preferably 150μm or less. If 50% average particle diameter r_{30} is less than 50μm, mucous membranes of users, etc. tend to be irritated.

[0027]

The manufacturing method of the spray product of the present embodiment is not specifically limited. For example, the spray product can be manufactured by filling a pump container with the insect repellent composition and by closing the opening of the pump container using an actuator.

[0028]

As described above, according to the spray product (pump product) of the present embodiment, although the specified insect repellent component which tends to irritate mucous membranes is contained, since the particle diameter ratio (r_{30} / r_{15}) of the sprayed insect repellent composition is maintained at 0.6 or higher after spraying, the mucous membrane irritation may be decreased.

F. [0042]

<Spray method>

The spray method of an embodiment of the present invention is to spray an insect repellent composition containing an insect repellent component using a spray product filled with the insect repellent composition and formed with a spray nozzle for spraying the insect repellent composition. In addition, the insect repellent component that is used in the spray method of the present embodiment includes at least one component selected

from the group consisting of 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate. Furthermore, the spray method of the embodiment is to spray the insect repellent composition so that the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of a sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle becomes 0.6 or higher.

[0043]

When working the spray method of the present embodiment, the same insect repellent composition containing an insect repellent component and the spray product can be used as those described in the first embodiment and the second embodiment. In addition, the spray method of the present embodiment can be worked using the spray product, which is a pump product, and can also be worked using the spray product, which is an aerosol product.

[0044]

According to the spray method of the present embodiment, although the specific insect repellent component that tends to irritate mucous membranes is contained, the sprayed insect repellent composition is sprayed in a way where the particle diameter ratio (r_{30} / r_{15}) is maintained at 0.6 or higher after spraying. As a result, the insect repellent composition that is sprayed by the spray method of the present embodiment hardly irritates the mucous membranes of users, etc.

G. [Embodiments]

[0045]

Hereinafter, the present invention will be described in more detail with the examples of the embodiment. The present invention is not limited in any way to these examples of the embodiment.

[0046]

<Pump product>

Details of the pump products used are described below.

(Pump product 1)

Pump product 1 is used in embodiments 1 through 10, and 14, comparative examples 1 through 6, and 8, and reference example 1. Pump product 1 includes the following actuator 1. The internal volume of pump product 1 is approximately 240 mL. The following examples of the embodiment and comparative examples were filled with approximately 150 mL of insect repellent composition.

Actuator 1: Mitani Valve Co., Ltd. (Product No.: Z-305-101T7); trigger type spray

component (Product No. ND-97-0; spray nozzle diameter: φ 0.45mm; dip tube inner diameter: φ 2.4mm; spray angle: 64 degrees (reference value); spray volume per time: approximately 0.3cc)

(Pump product 2)

Pump product 2 is used in embodiments 11 through 13, and comparative example 7. Pump product 2 includes the following actuator 2. The internal volume of pump product 1 is approximately 70 mL. The following examples of the embodiment and comparative examples were filled with approximately 50 mL of insect repellent composition.

Actuator 2: Mitani Valve Co., Ltd. (Product No.: Z-75-C115), push-down type spray component (Product No.: ND-913; spray nozzle diameter: φ 0.32mm; dip tube inner diameter: φ 2.1mm; spray angle: 21 degrees (reference value); spray volume per time: approximately 0.075cc)

[0047]

(Examples of embodiment 1 through 14; comparative examples 1 through 8; reference example 1)

An insect repellent composition was prepared according to the formulation stated in Table 1 or Table 2. The obtained insect repellent composition was filled into a pump container that can be attached on pump product 1 or pump product 2 after confirming that the dip tube of pump product 1 or pump product 2 is fully immersed; pump product 1 or pump product 2 was attached, and the spray product was thus manufactured. In addition, the unit of the numerical value of composition volume of each composition ingredient other than dehydrated ethanol as described in the table is (wt / v%).

[0050]

<50% average particle diameter>

The spray product was maintained at 25°C and a 50% average particle diameter was measured using a laser diffraction particle size measurement device (LDSA-1400A; MicrotracBEL Corp.). Concerning the measurement, the insect repellent composition was sprayed once at distances of 15 cm and 30cm from the spray nozzle and the average particle diameter of the insect repellent composition was measured. Based on the obtained measurement result, a particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} and 50% average particle diameter r_{30} was calculated. Measurement was performed 5 times, and an average of 3 points excluding the maximum value and the minimum value was calculated. The results are shown in Table 1.

[0051]

<Mucosal irritation>

The spray product was maintained at 25°C, the insect repellent composition was

sprayed at the shoulder of a subject from a distance of 15cm, and the subject evaluated the sensation of irritation. The spray frequency was determined to be once for pump product 1 and 4 times for pump product 2 so that spray volume would be equal. Mucosal irritation was evaluated according to the following evaluation criteria. It was evaluated by 10 subjects and an average was calculated. The results are shown in Table 1.

(Evaluation criteria)

1: No mucosal irritation was felt.

2: Weak mucosal irritation was felt.

3: Mucosal irritation was felt.

4: Strong mucosal irritation was felt.

5: Strong mucosal irritation above the tolerance levels was felt.

[0052]

As shown in Table 1, the spray products in the examples of embodiment 1 through 14, which were adjusted to have a particle size ratio (r_{30} / r_{15}) of 0.6 or higher, had reduced mucosal irritation to the same level as a spray product (e.g., reference example 1 shown in Table 2) in which N,N-diethyl-m-toluamide (Deet) is contained. In addition, as it can be seen from a comparison of the examples of embodiment 1 through 3 and examples of embodiment 11 through 13, it was found that the spray product in the present invention can obtain the effect of a reduction in mucosal irritation since the particle diameter ratio (r_{30} / r_{15}) is adjusted to 0.6 or higher even if the dimensions, etc. (spray type, spray nozzle diameter, spray volume per time, and other conditions) of the pump product to be used (actuator) are different. Further, as can be seen from a comparison of the examples of embodiment 5 and 6 and comparative example 4, a comparison of the examples of embodiment 7 and 8 and comparative example 5, and a comparison of the example of embodiment 14 and comparative example 8, it was found that the average particle diameter r_{30} can be adjusted by adjusting the volume of water and solvent to be combined and the effects of reduction in mucosal irritation can be obtained if the particle diameter ratio (r_{30} / r_{15}) is adjusted to 0.6 or higher by said adjustment. In addition, as can be seen from the comparison of the example of embodiment 4 and comparative example 3, the spray product in the example of embodiment 4 had a smaller value for the average particle diameter r_{30} than the spray product of comparative example 3; however, the particle diameter ratio (r_{30} / r_{15}) was larger than the spray product of comparative example 3. In other words, it was found that it was harder for the spray product of the example of embodiment 4 to be microparticulated over time than the spray product of comparative example 3, and this would reduce mucosal irritation. On the other hand, as shown in Table 2, with the spray

products of comparative examples 1 through 8, which were adjusted to have a particle diameter ratio (r_{30} / r_{15}) to less than 0.6, subjects felt stronger mucosal irritation than those of the examples of embodiment 1 through 14.

[0053]

(Examples of embodiment 14 through 16; comparative examples 8 and 9)

Insect repellent compositions of the examples of embodiment 14 through 16 and comparative examples 8 and 9 were prepared according to the formulation stated in Table 3. Among the obtained insect repellent compositions, the insect repellent compositions of the examples of embodiment 14 and 15 and comparative example 8 were filled into a pump container that can be attached to pump product 1 after confirming that the dip tube of pump product 1 is fully immersed; pump product 1 was attached, and the spray product was thus manufactured. Similarly, the insect repellent compositions of the example of embodiment 16 and comparative example 9 were filled into a pump container that can be attached to pump product 2 after confirming that the dip tube of pump product 2 is fully immersed; pump product 2 was attached, and the spray product was thus manufactured. In addition, the unit of the numerical value of composition volume of each composition ingredient other than dehydrated ethanol as described in the table is (wt / v%). With respect to the obtained spray products, the drop amount was measured by the following evaluation method. The results are shown in Table 3.

[0054]

<Drop amount measurement>

At the center of a tray, 5 tissue papers (Serenade Flower: 200mm × 205mm; Ideshigyo Kabushiki Kaisha) were placed in a stack. Samples were sprayed horizontally from a point at a distance of 30cm in a horizontal direction from the center of the tray and at a distance of 100cm in a vertical direction. 20 seconds after the spray, the tissue papers were collected. The weight of formulation adhered to the tissue papers and the weight of sprayed samples were measured by weighing. Then, the adhesion ratio was calculated according to the following formula.

Adhesion ratio (%) = Weight of formulation adhered to tissue papers / Weight of sprayed samples × 100

[0056]

As shown in Table 3, it was found, concerning the spray products of the examples of embodiment 14 through 16, that the formulation often dropped in the spray direction, without scattering that much, and was sprayed efficiently in the spray direction. On the other hand, concerning the spray products of comparative examples 8 and 9, it was

found that the drop amount of the formulation against the spray amount was small and the formulation scattered into the air. Therefore, it is presumed that the small amount of the formulation scattering in the present invention is also a cause of reduction in the irritation sensation.

(2) According to the statement in (1) above, it is found that there are the following disclosures in relation to Invention 1 in the detailed explanation in the Descriptions.

A. Previously, insect repellents in which 3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate are contained as an insect repellent component in lieu of N,N-diethyl-m-toluamide (Deet), which is an insect repellent component that had been used in an insect repellent, had problems, such as when it was sprayed as a pump product or aerosol product, sprayed particles tended to irritate the mucous membranes, such as the nose, throat, etc. of the user or persons near the user, causing them to feel a sense of discomfort with their mucous membranes or to cough ([0002] and [0004]).

B. In consideration of such problems, "the present invention" aims to provide a spray product and spray method that have decreased mucous membrane irritation although an insect repellent component that tends to irritate mucous membranes, such as the nose, throat, etc. of users is contained and sets as its problem to provide the aforementioned spray product and the spray method ([0005]).

"The present inventors" gained the following knowledge that some of the sprayed insect repellents do not adhere to the application points, such as skin, hair, etc., but reach a point (e.g., at a distance of 30cm from a spray nozzle) beyond the application distance (e.g., at a distance of 15 cm from the spray nozzle) and float; at such a distant point (a point exceeding the application site), the particle diameter is smaller than the particle diameter at the application distance and, as a result, the particles that have decreased in size tend to be aspirated and to irritate the mucous membranes; and therefore, the present inventors took into consideration not only the particle diameter at the application distance, but also the particle diameter at a point exceeding the application site, found that a spray product wherein the particle diameter ratio at each point is adjusted to the pre-determined value or higher can decrease mucous membrane irritation and solve the problem even when combined with an insect repellent component that tends to irritate mucous membranes, and completed the present invention." ([0006]).

The spray product of "the present invention" is a spray product, as a means to solve the problem, filled with an insect repellent composition containing an insect repellent component that is at least one component selected from the group consisting of 3-(N-

n-butyl-N-acetyl) aminopropionic acid ethylester, p-menthane-3,8-diol, and 1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate and formed with a spray nozzle for spraying the insect repellent composition; and it adopted the following structure, wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of a sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher, and wherein 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 50μm or larger ([0007]).

According to the spray product of "the present invention," although an insect repellent component, which tends to irritate mucous membranes, such as the nose, throat, etc., of users, is contained, since the particle diameter ratio (r_{30} / r_{15}) of the sprayed insect repellent composition is maintained at 0.6 or higher after spraying, it shows the effect that the mucous membrane irritation may be decreased ([0009] and [0028]).

2. Grounds for Rescission 1 (Error in the determination concerning the correction requirements)

(1) Error in the determination concerning the purpose of the correction

A. Whether there is an aim for "restriction of the claims"

The Plaintiff alleged that the JPO Decision determined concerning the Correction as follows: [i] corrected matter 1 is to correct the term "噴射製品[spray product]" as defined in Claim 1 before the Correction to the expression "粘膜への刺激が低減された、噴射製品[spray product that has decreased mucous membrane irritation]"; the spray product is an invention of an article filled with an insect repellent composition; it is understood that the invention reduced the action of irritation to mucous membranes that the insect repellent composition causes and the invention limited the substantial action and use of the invention of an article filled with the insect repellent composition, as a structure of the invention; and therefore, corrected matter 1 aims to "restrict the claims" (Article 134-2, proviso to paragraph (1), item (i) of the Patent Act); and [ii] corrected matter 2 is to correct the term "噴射方法[spray method]" as defined in Claim 3 before the Correction to the expression "粘膜への刺激を低減する、噴射方法[spray method that decreases mucous membrane irritation]"; the spray method is an invention of "a spray method to spray an insect repellent composition"; and it is understood that the invention reduced the action of irritation to mucous membranes that the insect repellent composition causes and the invention limited the substantial action and use of the invention of a method to spray the insect repellent composition, as a structure of the

invention; and therefore, corrected matter 2 aims to "restrict the claims"; however, there are errors in the determination of the JPO Decision. Therefore, it is examined below.
(A) It is found that corrected matter 1 corrected the term "噴射製品[spray product]" as defined in Claim 1 before the Correction to the expression "粘膜への刺激が低減された、噴射製品[spray product that has decreased mucous membrane irritation]" and corrected matter 2 corrected the term "噴射方法[spray method]" as defined in Claim 3 before the Correction to the expression "粘膜への刺激を低減する、噴射方法[spray method that decreases mucous membrane irritation]" (Exhibit Ko 46); and the statements related to actions of "having decreased mucous membrane irritation" or "decreasing mucous membrane irritation" are added to statements of "噴射製品[spray product]" as defined in Claim 1 before the Correction and "噴射方法[spray method]" as defined in Claim 3 before the Correction respectively.

In other words, there are the following statements concerning the "reduction of mucous membrane irritation" in the Descriptions: "the present inventors took into consideration not only the particle diameter at an application distance, but also the particle diameter at a point exceeding the application site, found that a spray product wherein the particle diameter ratio at each point is adjusted to the pre-determined value or higher can decrease mucous membrane irritation and can solve the problem even when combined with an insect repellent component that tends to irritate mucous membranes, and completed the present invention." ([0006]); "the spray product of the embodiment is adjusted so that the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of a sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of a sprayed insect repellent composition at a distance of 30cm from the spray nozzle becomes 0.6 or higher. In addition, the spray product of the present embodiment is characterized in that the particle diameter ratio at the time of spraying is adjusted to be in a specific range. For this reason, other configurations (e.g., the shape of the spray product, a variety of physical properties, such as other components, composition, internal pressure of containers, etc.) are required to be within the range of the particle diameter ratio and not particularly limited." ([0010]); "the spray product of the present embodiment is adjusted so that the particle diameter ratio (r_{30} / r_{15}) becomes 0.6 or higher. For this reason, the particle diameter of the sprayed insect repellent composition remains the same at a distance of 30cm from the spray nozzle. As a result, the spray product may have reduced mucous membrane irritation although the specific insect repellent component that tends to irritate mucous membranes is contained." ([0023]); "As described above, it is only required for the spray product of the present embodiment to

be adjusted so that the particle diameter ratio (r_{30} / r_{15}) of the sprayed insect repellent composition becomes 0.6 or higher and the method of adjusting the particle diameter ratio to be within the above range is not specifically limited." ([0024]); "As described above, according to the spray product (pump product) of the present embodiment, although the specified insect repellent component which tends to irritate mucous membranes is contained, since the particle diameter ratio (r_{30} / r_{15}) of the sprayed insect repellent composition is maintained at 0.6 or higher after spraying, the mucous membrane irritation may be decreased." ([0028]); "According to the spray method of the present embodiment, although the specific insect repellent component that tends to irritate mucous membranes is contained, the sprayed insect repellent composition is sprayed in a way where the particle diameter ratio (r_{30} / r_{15}) is maintained at 0.6 or higher after spraying. As a result, the insect repellent composition that is sprayed by the spray method of the present embodiment hardly irritates the mucous membranes of users, etc." ([0044]); "As shown in Table 1, the spray products in the examples of embodiment 1 through 14, which were adjusted to have a particle size ratio (r_{30} / r_{15}) of 0.6 or more, had reduced mucosal irritation to the same level as a spray product (e.g., reference example 1 shown in Table 2) in which N,N-diethyl-m-toluamide (Deet) is contained. In addition, as can be seen from a comparison of the examples of embodiment 1 through 3 and examples of embodiment 11 through 13, it was found that the spray product in the present invention can obtain the effects of a reduction in mucosal irritation since the particle diameter ratio (r_{30} / r_{15}) is adjusted to 0.6 or higher even if the dimensions, etc. (spray type, spray nozzle diameter, spray volume per time, and other conditions) of the pump product to be used (actuator) are different." ([0052]). Based on the descriptions above, it is found that the Descriptions disclosed the following: the function and effect of "reduction of mucous membrane irritation" are shown by the structure "wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher" as defined in Claim 1 before the Correction or the structure "wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} at a distance of 30cm from the spray nozzle is 0.6 or higher" as defined in Claim 3 before the Correction. On the other hand, the Descriptions have no statements or suggestions that even in cases where the structures as defined in Claims 1 and 3 before the Correction were used, there are cases where the function and effect of "reduction of mucous membrane irritation" are not

shown.

Then, the statements related to the actions of "having decreased mucous membrane irritation" or "decreasing mucous membrane irritation" that were added by corrected matters 1 and 2 only stated the function and effect shown by the structures as defined in Claims 1 and 3 before the Correction. Therefore, it cannot be found that corrected matters 1 and 2 narrowed down the claims related to the inventions as defined in Claims 1 and 3 before the Correction.

(B) Consequently, it cannot be found that corrected matters 1 and 2 aim to "restrict the claims" (Article 134-2, proviso to paragraph (1), item (i) of the Patent Act), and therefore, the allegation of the Plaintiff has grounds.

B. Allegation of the Defendant

The Defendant alleged as follows: it is understood that, in the invention of an article filled with an insect repellent composition (Claim 1 before the Correction), corrected matter 1 reduced the action of mucous membrane irritation that the insect repellent composition causes and it substantially limited the usage or action of the invention of an article filled with an insect repellent composition as a structure of the invention; and it is understood that, in the invention of a spray method to spray an insect repellent composition (Claim 3 before the Correction), corrected matter 2 reduced the action of mucous membrane irritation that the insect repellent composition causes and it substantially limited the usage or action of the invention of a method to substantially spray an insect repellent composition as a structure of the invention; and corrected matters 1 and 2 limited at least the usages or actions concerning the claims of the inventions as defined in Claims 1 and 3 before the Correction, and therefore, they aim to "restrict the claims."

However, the aforementioned allegation of the Defendant states the same grounds as the JPO Decision, and therefore, as explained in A. above, it cannot be accepted.

(2) Summary

As described above, corrected matters 1 and 2 are not found to be aiming to "restrict the claims" (Article 134-2, proviso to paragraph (1), item (i) of the Patent Act), and therefore, without the need to make determinations concerning the remaining points, the Correction does not conform to said item.

Then, the JPO Decision contains an error in the determination concerning the correction requirements of the Correction and this error in the determination was caused by the error in the finding of the summary of the invention related to Claims 1 through 3 of the claims of the Patent, and therefore, the JPO Decision should be rescinded.

3. Grounds for Rescission 2 (Error in the determination concerning novelty of

Inventions 1 through 3 for which the invention related to Exhibit Ko 1 Product (Publicly Worked Invention) is cited as the primary prior art) (related to Grounds for Invalidation 1)

In consideration of this case, Grounds for Rescission 2 on the premises that the Correction is lawful are examined for confirmation.

(1) Error in the determination concerning novelty of Invention 1

A. Differences 2 and 3

(A) The JPO Decision found that Publicly Worked Invention 1-1 is "a spray product" with a particle diameter ratio (r_{30} / r_{15}) of "0.80" and 50% average particle diameter r_{30} of "236.27μm," and that Invention 1 and Publicly Worked Invention 1-1 have common features that they are "spray products" with "the particle diameter ratio (r_{30} / r_{15}) of 0.6 or higher" and "50% average particle diameter r_{30} of 50μm or larger." Concerning Differences 2 and 3, the JPO Decision found as follows: Publicly Worked Invention 1-1 is not found to have been recognized as a spray product wherein the particle diameter ratio (r_{30} / r_{15}) is adjusted to 0.6 or higher and the 50% average particle diameter r_{30} is adjusted to 50μm or larger, and thereby, mucous membrane irritation is reduced; it cannot be said that there was "a technical idea that even if an insect repellent component that tends to irritate mucous membrane is contained, a spray product that has decreased mucous membrane irritation by adjusting the particle diameter rate (r_{30} / r_{15}) of a sprayed insect repellent composition to 0.6 or higher by focusing on the particle diameter rate (r_{30} / r_{15}), and by adjusting the 50% average particle diameter r_{30} to 50μm or larger by focusing on the 50% average particle diameter r_{30}." Then, the JPO Decision determined that Differences 2 and 3 are substantial differences (No.2, 3. (1) A., (2) A., and (3) A. (B) above).

However, it is understood that, in light of the fact that the claims of the patent related to the invention of an article is specified by its mechanism, the characteristics, etc., the term "adjusted" as used in the structure "wherein the particle diameter ratio (r_{30} / r_{15}) of 50% average particle diameter r_{15} of the sprayed insect repellent composition at a distance of 15cm from the spray nozzle and 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 0.6 or higher, and wherein the 50% average particle diameter r_{30} of the sprayed insect repellent composition at a distance of 30cm from the spray nozzle is adjusted to 50μm or larger" in the claims (Claim 1) of Invention 1 referred to "adjusted conditions" and the aforementioned structure stipulated that "particle diameter ratio (r_{30} / r_{15})" and "50% average particle diameter r_{30}" after the adjustment are "0.6 or higher" and "50μm or larger" respectively.

Based on the above, both the particle diameter ratio (r_{30} / r_{15}) "0.80" and 50% average particle diameter r_{30} "236.75μm" of Publicly Worked Invention 1-1 indicate the adjusted conditions and are included in the numerical range of the "particle diameter ratio (r_{30} / r_{15})" "0.6 or higher" and "50% average particle diameter r_{30}" "50μm or larger" of Invention 1. Therefore, Publicly Worked Invention 1-1 is found to have the aforementioned structure of Invention 1.

Then, Difference 2 is found not to be a substantial difference between Invention 1 and Publicly Worked Invention 1-1, and therefore, there is an error in the determination concerning Difference 2 in the JPO Decision.

(B) Next, the technical idea that is found by the JPO Decision as defined in (A) above is not a matter stated in the claims (Claim 1) of Invention 1. Therefore, when determining the identicalness between Invention 1 and Publicly Worked Invention 1-1, using the fact that the existence of the technical idea in Publicly Worked Invention 1-1 is recognized or can be recognized as a criterion for determination is not based on the statement of the claims and is not reasonable.

Then, the determination of the JPO Decision that Differences 2 and 3 are substantial differences contains an error in this regard.

The allegations of the Defendant against the above cannot be accepted.

B. Difference 1

The JPO Decision determined as follows concerning Difference 1: [i] Publicly Worked Invention 1-1 contains water, but Exhibit Ko 2 stated that water is added as a "solvent"; and therefore, the purpose of adding water in Publicly Worked Invention 1-1 is different from that in Invention 1; and it is not found that water is recognized as a volatilization suppressive component to suppress volatilization after spraying; [ii] it is understood that the following facts form a unified technical idea: "by containing a volatilization suppressive component to suppress volatilization after spraying" (particulars for identifying Invention 1 related to Difference 1); "by adjusting the particle diameter rate (r_{30} / r_{15}) to 0.6 or higher" and "by adjusting 50% average particle diameter r_{30} to 50μm or larger" (particulars for identifying Invention 1 related to Difference 2); and thereby creating "a spray product that has decreased mucous membrane irritation" (particulars for identifying Invention 1 related to Difference 3); then, even if water is contained in Publicly Worked Invention 1-1, it cannot be found that the following technical idea was recognized: said water acts as "a volatilization suppressive component to suppress volatilization after spraying," "a spray product that has decreased mucous membrane irritation" is created as a result that "particle diameter ratio (r_{30} / r_{15}) is adjusted to 0.6 or higher," and "50% average particle diameter r_{30} is

adjusted to 50μm or larger." In conclusion, the JPO Decision determined that Difference 1 is a substantial difference (No. 2, 3. (3) B. above).

However, the aforementioned determination by the JPO Decision contains an error as stated below.

(A) Concerning [i]

a. The claims (Claim 1) of Invention 1 have the following statement: "the insect repellent composition contains 10% by mass or more of a volatilization suppressive component (except in the case where the volatilization suppressive component is glycerin) that has a vapor pressure of 2.5 kPa or lower at 20°C in the insect repellent composition in order to suppress volatilization after spraying the insect repellent composition." Based on the aforementioned statement, it is understood that a "volatilization suppressive component" as defined in Invention 1 is a component to suppress volatilization after spraying and glycerin is not included in the component; however, on the other hand, there is no statement in Claim 1 to stipulate what component other than glycerin falls under the "volatilization suppressive component."

Next, concerning the volatilization suppressive component, there are the following statements in the Descriptions: "The insect repellent composition preferably contains, in addition to the insect repellent component, a volatilization suppressive component, for which the vapor pressure at 20°C is 2.5 kPa or lower in order to suppress volatilization after spraying. This will suppress the volatilization of sprayed insect repellent composition and it is hard for particle diameter to be decreased in size. The volatilization suppressive component is not specifically limited. For example, the volatilization suppressive component is at least one component selected from the group consisting of 1,3-butylene glycol, propylene glycol, dipropylene glycol, glycerin, polyethylene glycol, polypropylene glycol, and other glycols; glycerin fatty acid ester and other fatty acid esters; palm oil and other vegetable oils; liquid paraffin; and water." ([0014]). Based on the aforementioned statement, it is understood that "water, for which the vapor pressure at 20°C is 2.5 kPa or lower" is one of the components falling under the "volatilization suppressive component" of Invention 1.

Then, "water, for which the vapor pressure at 20°C is 2.3366 kPa" that is contained in Publicly Worked Invention 1-1 is found to fall under the "volatilization suppressive component" of Invention 1, and therefore, Difference 1 is not found to be a substantial difference.

b. In this regard, the JPO Decision cited the following point as one of the reasons why Difference 1 is a substantial difference: Publicly Worked Invention 1-1 contains water and according to Exhibit Ko 2, water is added as a "solvent" and it is not found to have

been recognized as a volatilization suppressive component to suppress volatilization after spraying.

However, in light of the fact that the claims for a patent related to the invention of an article are identified by the mechanism, characteristics, etc. of the invention, whether "water" contained in Publicly Worked Invention 1-1 falls under the "volatilization suppressive component" of Invention 1 should be determined as to whether the "water" can be identified objectively to be a component to suppress volatilization after spraying; and therefore, the aforementioned determination should not be affected by the purpose of adding water and whether water was recognized as a volatilization suppressive component to suppress volatilization after spraying.

Therefore, there is an error in the determination concerning [i] above by the JPO Decision.

(B) Concerning [ii]

The JPO Decision cited the following point as one of the reasons why Difference 1 is a substantial difference: even if water is contained in Publicly Worked Invention 1-1, it cannot be found that the following technical idea was recognized: "a spray product that has decreased mucous membrane irritation" is created as a result that said water acts as "a volatilization suppressive component to suppress volatilization after spraying," "the particle diameter rate (r_{30} / r_{15}) is adjusted to 0.6 or higher" and "50% average particle diameter r_{30} is adjusted to 50μm or larger."

However, the technical idea that is found by the JPO Decision is not a matter stated in the claims (Claim 1) of Invention 1. Therefore, when determining the identicalness between Invention 1 and Publicly Worked Invention 1-1, using the fact that the existence of the technical idea in Publicly Worked Invention 1-1 is recognized or can be recognized as a criterion for determination is not based on the statement of the claims and is not reasonable. Consequently, there is an error in the determination concerning [ii] above by the JPO Decision.

(C) Summary

Therefore, there is an error in the determination by the JPO Decision that Difference 1 between Invention 1 and Publicly Worked Invention 1-1 is a substantial difference.

The allegations of the Defendant against the above cannot be accepted.

C. Summary

Based on the above, there is an error in the determination concerning Differences 1 through 3 by the JPO Decision, and therefore, there is an error in the determination by the JPO Decision that Invention 1 is not identical to Publicly Worked Invention 1-1.

(2) Error in the determination concerning novelty of Invention 2

The JPO Decision determined that Invention 2 directly cites Invention 1, and therefore, Invention 2 cannot be said to be an invention that was publicly known to be worked based on the same reasons for the determination concerning Invention 1 and Publicly Worked Invention 1-1.

However, as stated in (1) above, there is an error in the determination concerning the identicalness between Invention 1 and Publicly Worked Invention 1-1 by the JPO Decision, and therefore, there is an error in the aforementioned determination concerning Invention 2 by the JPO Decision.

(3) Error in the determination concerning novelty of Invention 3

The JPO Decision determined that although Publicly Worked Invention 1-1, which is an invention of an article, and Publicly Worked Invention 1-3, which is an invention of a method, are in different categories of inventions, the technical matters identified for both inventions are the same; Differences 1 through 3 between Invention 3 and Publicly Worked Invention 1-3 are substantially the same as Differences 1 through 3 between Invention 1 and Publicly Worked Invention 1-1; and based on the same grounds for the determination concerning Invention 1 and Publicly Worked Invention 1-1, Invention 3 is not an invention that was publicly known to be worked.

However, as stated in (1) above, there is an error in the determination concerning the identicalness between Invention 1 and Publicly Worked Invention 1-1 by the JPO Decision, and therefore, there is an error in the aforementioned determination concerning Invention 3 by the JPO Decision.

(4) Summary

Based on the above, there is an error in the determination concerning the novelty of Inventions 1 through 3 by the JPO Decision, and therefore, Grounds for Rescission 2 alleged by the Plaintiff have grounds.

In addition, as stated in 2 (2) above, the JPO Decision should be rescinded by Grounds for Rescission 1. Therefore, the binding authority of this judgment (Article 33, paragraph (1) of the Administrative Case Litigation Act) does not apply to this determination.

No. 5 Conclusion

As mentioned above, Grounds for Rescission 1 alleged by the Plaintiff have grounds, and therefore, the JPO Decision should be rescinded and the judgment shall be rendered as indicated in the main text.

Intellectual Property High Court, First Division
Presiding judge: OTAKA Ichiro

Judge: OGAWA Takatoshi
Judge: TOYAMA Atsushi

[Table 1]

Table 1

Composition	Examples of embodiment													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester	5	5	5	5	-	-	-	-	-	-	5	5	5	20
1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate	-	-	-	-	5	5	15	15	-	-	-	-	-	-
p-menthane-3,8-diol	-	-	-	-	-	-	-	-	15	15	-	-	-	-
1,3-butylene glycol	10	20	5	-	20	5	20	5	20	5	10	20	5	20
propylene glycol	-	-	-	20	-	-	-	-	-	-	-	-	-	-
Purified water	-	-	10	-	-	10	-	10	-	10	-	-	10	-
Anhydrous ethanol	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount
Total	To be 100mL.													
Average particle diameter r_{15} (μm)	111.7	111.9	105.1	91.4	109.2	111.3	112.6	113.2	117.2	103.6	80.2	86.5	84.3	111.3
Average particle diameter r_{30} (μm)	118.9	123.8	72.8	56.9	107.5	95.1	137.7	149.9	105.0	106.8	59.4	76.4	72.4	84.3
Particle diameter ratio (r_{30} / r_{15})	1.06	1.11	0.69	0.62	0.98	0.85	1.22	1.32	0.90	1.03	0.74	0.88	0.86	0.76
Mucosal irritation evaluation results (Evaluation results for 10 subjects in total)														
Number of subjects who evaluated the mucosal irritation as 1	3	7	0	0	2	2	0	0	0	4	3	6	0	0
Number of subjects who evaluated the mucosal irritation as 2	6	3	6	6	7	5	6	5	6	6	5	4	6	3
Number of subjects who evaluated the mucosal irritation as 3	0	0	4	4	1	3	4	4	4	0	2	0	3	6
Number of subjects who evaluated the mucosal irritation as 4	1	0	0	0	0	0	0	1	0	0	0	0	1	1
Number of subjects who evaluated the mucosal irritation as 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average score	1.9	1.3	2.4	2.4	1.9	2.1	2.4	2.6	2.4	1.6	1.9	1.4	2.5	2.8

[Table 2]

Table 2

Composition	Comparative example								Reference example
	1	2	3	4	5	6	7	8	1
3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester	5	5	5	-	-	-	5	20	-
1-metylpropyl 2-(2-hydroxylethyl)-1-piperidine carboxylate	-	-	-	5	15	-	-	-	-
p-menthane-3,8-diol	-	-	-	-	-	15	-	-	-
N,N-diethyl-m-toluamide	-	-	-	-	-	-	-	-	5
1,3-butylene glycol	-	-	-	-	-	-	-	-	-
Anhydrous ethanol	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount
Total	To be 100mL.								
Average particle diameter r_{15} (μm)	105.9	110.6	116.3	110.3	105.9	109.3	73.9	110.9	104.0
Average particle diameter r_{30} (μm)	31.5	51.9	62.2	52.4	56.9	47.4	34.8	53.7	40.4
Particle diameter ratio (r_{30} / r_{15})	0.30	0.47	0.53	0.48	0.54	0.43	0.47	0.48	0.39
Mucosal irritation evaluation results (Evaluation results for 10 subjects in total)									
Number of subjects who evaluated the mucosal irritation as 1	0	0	0	0	0	0	0	0	5
Number of subjects who evaluated the mucosal irritation as 2	1	1	2	0	0	0	0	0	4
Number of subjects who evaluated the mucosal irritation as 3	1	1	2	3	1	6	2	0	1
Number of subjects who evaluated the mucosal irritation as 4	2	2	4	6	1	3	2	2	0
Number of subjects who evaluated the mucosal irritation as 5	6	6	2	1	8	1	6	8	0
Average score	4.3	4.3	3.6	3.8	4.7	3.5	4.4	4.8	1.6

[Table 3]

Table 3

Composition	Example of embodiment			Comparative example	
	14	15	16	8	9
3-(N-n-butyl-N-acetyl) aminopropionic acid ethylester	20	20	20	20	20
1,3-butylene glycol	20	5	5	-	-
Purified water	-	10	10	-	-
Anhydrous ethanol	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount	Appropriate amount
Total	To be 100mL.				
Spray weight (g)	1.39	1.44	1.24	1.30	1.13
Adhesion weight (g)	0.22	0.15	0.23	0.025	0.1
Adhesion ratio	15.9%	10.4%	18.6%	1.9%	8.9%