Patent Right	Date	May 14, 2024	Court	Intellectual Property High Court, Third Division
	Case number	2023 (Gyo-Ke) 10098		
- A case in which the court found concerning a patented invention titled "Laundry detergent composition," that a person ordinarily skilled in the art could have easily conceived of the structure related to the difference between the patented invention and the cited invention based on the cited invention and well-known art at the time of the application date and that the effect of the patented invention is not an outstanding effect that goes beyond the scope of the effect that a person skilled in the art could have predicted based on the structure of the patented invention, and the court rescinded the JPO decision determining that a request for a trial for patent invalidation is groundless.				

Case type: Rescission of Trial Decision to Maintain
Results: Granted
References: Article 29, paragraph (2) of the Patent Act
Related rights, etc.: Patent No. 6718777
Trial decision: Invalidation Trial No. 2022-800049

Summary of the Judgment

1. This is a lawsuit seeking rescission of the JPO's trial decision ("JPO Decision") to the effect that a request for a trial for patent invalidation concerning Invention 1 and Inventions 3 through 5 related to the invention titled "Laundry detergent composition" is groundless.

The Plaintiff argued a lack of novelty, lack of an inventive step, and violation of the support requirement based on the cited invention as grounds for invalidation at the trial stage. However, the JPO determined that no grounds for invalidation were found.

The Plaintiff filed this lawsuit to seek rescission of the JPO Decision. Grounds for rescission that the Plaintiff argues are an error in the determination concerning novelty, error in the determination concerning an inventive step, and error in the determination concerning the existence of violation of the support requirement.

2. In this judgment, the court determined that it is not found that there is an error in the JPO Decision concerning the determinations concerning the novelty and the existence of violation of the support requirement; however, concerning an inventive step, the court determined that a person ordinarily skilled in the art could have easily conceived of the structure related to the difference between Invention 1 and the cited invention

based on the cited invention and well-known art at the time of the filing date and that it is not found that the effect of the patented invention is an outstanding effect that goes beyond the scope of the effect that a person skilled in the art could have predicted based on the structure of the patented invention. Then, the court concluded that there is an error in the determination of the JPO Decision related to an inventive step of Invention 1 and that there is also an error in the determination of the JPO Decision related to an inventive step of Inventions 3 through 5 that was made based on its determination related to Invention 1, and rescinded the JPO Decision.

The outline of the determination in this judgment on an inventive step is as stated below.

(1) Concerning Component (G) that is a non-ionic surfactant in Invention 1, [i] hydrocarbon of alkyl radical contained in the compound represented by General Formula (II) is a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14, while concerning non-ionic surfactant contained in the cited invention, both natural alcohol-derived alkyl radical having linear hydrocarbon radicals comprised of an even number of carbons and synthetic alcohol-derived alkyl radical having hydrocarbon radicals with an odd carbon number of carbons or a branched chain can be used, and [ii] the content of the component (the component ratio) is different. These points exist as differences between Invention 1 and the cited invention (Difference 2).

However, it is found to have been common general technical knowledge at the time of the filing date that natural alcohols and synthetic alcohols are used in the same way as raw materials of alkyl radicals in alcohol ethoxylate used in detergents, and that in recent years, natural alcohols have come to be used often. It is not found that there was common general technical knowledge that either natural alcohol-derived hydrocarbons or synthetic alcohol-derived hydrocarbons are more suitable for a laundry detergent composition than the other. Therefore, a person ordinarily skilled in the art could have naturally conceived of using natural alcohols as raw materials for the hydrocarbon of the alkyl radical of alcohol ethoxylate.

In addition, concerning the content of the ingredients of the non-ionic surfactants in Invention 1 and the cited invention, it is a matter of design variation for a person ordinarily skilled in the art to specify the content within the range specified by the cited invention.

Consequently, a person skilled in the art could have easily conceived of the structure related to Difference 2 in the cited invention, based on the cited invention and well-known art.

(2) The content of Component (C), which is an aminocarboxylic acid-type chelating

agent in Invention 1, and that of "MGDA," which corresponds to the relevant ingredient in the cited invention, are different (Difference 1). However, as it is a matter of design variation for a person ordinarily skilled in the art to specify the content within the specified range, it can be said that a person ordinarily skilled in the art could have easily conceived of considering the content within the range of the content specified in the cited invention and determining it to be the content specified in Invention 1 (deriving the structure related to Difference 1).

(3) The mass ratio (A/C ratio) of Component (A), which is an anionic surfactant in Invention 1, and Component (C), and the content ratio of anionic surfactant and "MGDA" in the cited invention are different in numerical values (range) (Difference 3). As stated in (2) above, it is a matter of design variation for a person ordinarily skilled in the art to determine the content of "MDGA" to be the content specified in Invention 1. Concerning the content of anionic surfactants as well, a person ordinarily skilled in the art could also have determined it as necessary within the range of the content specified in the cited invention. It is not construed that special originality and ingenuity is required for a person ordinarily skilled in the art to set the A/C ratio to be a value within the range specified in Invention 1 (to derive the structure related to Difference 3) as a result of setting the contents of Component (A) and Component (C) within the numerical range of the content stated in the cited invention. Therefore, a person ordinarily skilled in the art could have easily conceived of the structure.

(4) Concerning the effect of Invention 1, in particular, concerning whether the degree of the effect is unpredictable, it should be examined from the perspective of whether the effect is one that a person ordinarily skilled in the art could not have predicted as an effect produced by the structure of Invention 1 at the time of the Application Date and from the perspective of whether the effect is an outstanding effect that goes beyond the scope of the effect that a person skilled in the art could have predicted based on the relevant structure.

In the description related to the Patented Invention, an assessment of the deodorizing effect based on working examples is stated. According to the statement, a certain deodorizing effect is obtained in working examples that fulfill the composition specified in Invention 1. However, that effect is not obviously excellent and it is not found to be superior to the deodorizing effect of working examples that do not correspond to the composition specified in Invention 1. Consequently, it cannot be found that the effect of Invention 1 is an outstanding effect that goes beyond the scope of the effect that a person ordinarily skilled in the art could have predicted to be the effect shown in the case of applying the matters specifying the invention related to

Differences 1 through 3 in the cited invention.

(5) Based on the above, it is found that the determination of the JPO Decision on an inventive step of Invention 1 against the cited invention contains an error and Invention 1 is an invention that cannot be patented pursuant to Article 29, paragraph (2) of the Patent Act.

The JPO Decision determined that, in the same way as Invention 1, Inventions 3 through 5 are not inventions that cannot be patented pursuant to Article 29, paragraph (2) of the Patent Act on the assumption that these inventions cited Invention 1 directly or indirectly and the matters specifying the inventions are further added to them. However, the determination of the JPO Decision on an inventive step of Invention 1 contains an error, and therefore, the aforementioned determination related to Inventions 3 through 5 also contains an error.

Judgment rendered on May 14, 2024
2023 (Gyo-Ke) 10098 Case of seeking rescission of the JPO decision
Date of conclusion of oral argument: March 12, 2024

Judgment

Plaintiff: The Procter & Gamble Company

Defendant: Lion Corporation

Main text

1. The part related to Claim 1 and Claims 3 through 5 of Patent No. 6718777 in the decision made by the Japan Patent Office (the "JPO") on April 20, 2023, for the case of Invalidation Trial No. 2022-800049, shall be rescinded.
2. The Defendant shall bear the court costs.

Facts and reasons

No. 1 Claim

Same as the main text.

No. 2 Outline of the case

1. History of the procedures at the JPO

(1) The Defendant filed an application for a patent (Patent Application No. 2016-172763) for the invention titled, "Laundry detergent composition," with the application date of September 5, 2016 (hereinafter referred to as the "Application Date"), and obtained the patent right registration (Patent No. 6718777; Number of claims: 6; hereinafter the patent shall be referred to as the "Patent" and descriptions related to the Patent shall be referred to as the "Description") on June 17, 2020. (Exhibit Ko 7)

(2) An opposition to a granted patent was filed against the Patent on January 8, 2021 (Opposition No. 2021-700022), and a notification of the reasons for revocation was sent as of April 20, 2021. The Defendant submitted a written opinion on June 18, 2021, and requested the correction of claims. The JPO approved the correction on October 27, 2021, and made a decision of opposition to the effect that the patent related to Claims 1 through 6 was to be maintained. (Exhibits Ko 8 and 9)

(3) The Plaintiff requested a trial for invalidation concerning the Patent (Claims 1 through 6 after the correction that was approved in the opposition case described in (2) above) on June 8, 2022 (Invalidation Trial No. 2022-800049; hereinafter referred to as the "JPO Trial"). The Defendant submitted a written reply for the trial case on August

25, 2022, and requested correction of claims (hereinafter referred to as the "Correction"). Claims 2 and 6 were deleted by the Correction from among Claims 1 through 6 after the correction that was approved in the opposition case described in (2) above. (Exhibits Ko 21 through 23)

(4) The JPO approved the Correction on April 20, 2023, and determined that "The request for a JPO Trial concerning the invention related to Claims 2 and 6 of Patent No. 6718777 shall be dismissed. The request for a JPO Trial concerning the invention related to Claim 1 and Claims 3 through 5 of Patent No. 6718777 is groundless" (hereinafter referred to as the "JPO Decision"). The certified copy was delivered to the Plaintiff on May 9, 2023 (additional time frame: 90 days).

(5) The Plaintiff filed this lawsuit to seek rescission of the part related to Claim 1 and Claims 3 through 5 of the Patent in the JPO Decision on September 1, 2023.

2. Statements of the claims

The statements of the claims after the Correction are as stated below (underlined parts are corrections by the Correction; hereinafter the inventions stated in Claim 1 and Claims 3 through 5 after the Correction are referred to as "Invention 1," "Invention 3" through "Invention 5" respectively and are collectively referred to as the "Inventions"). (Exhibit Ko 23)

[Claim 1]

The laundry detergent composition comprises the following (excluding composition containing silver dihydrogen citrate):

Component (A): anionic surfactant (excluding fatty acid salts with the carbon number from 10 to 20);

Component (B): a phenol-type antimicrobial agent containing 4,4'-dichloro-2-hydroxydiphenyl ether;

Component (C): 0.02 to 1.5% by mass of aminocarboxylic acid-type chelating agent containing a compound represented by the following Formula (c1); and

Component (G): non-ionic surfactant;

wherein the content of Component (G) is 20 to 40% by mass against the total mass of the laundry detergent composition;

wherein Component (G) is

at least one of the types represented by the following General Formula (I) or (II);

R^2-C(=O)O-[$(EO)_s$/$(PO)_t$]-$(EO)_u$-R^3...(I)

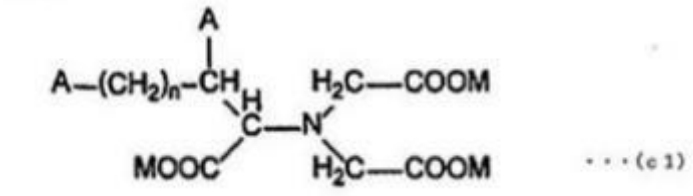
R^4- O-[$(EO)_v$/$(PO)_w$]-$(EO)_x$-H...(II)

(In Formula (I), R^2 represents a hydrocarbon radical with the carbon number from 7 to 22; R^3 represents an alkyl radical having the carbon number from 1 to 6; s represents

the average number of repetitions of EO and is a number from 6 to 20; t represents the average number of repetitions of PO and is a number from 0 to 6; u represents the average number of repetitions of EO and is a number from 0 to 20; EO represents an oxyethylene radical; and PO represents an oxypropylene radical.

In Formula (II), R^4 represents a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14; v and x independently represent the average number of repetitions of EO and the number of v + x is from 3 to 20; PO represents an oxypropylene radical; w represents the average number of repetitions of PO and is a number from 0 to 6); and wherein the mass ratio that is represented by Component (A) / Component (C) is 10 to 100.

[Chemical Formula 1]



In Formula (cl), A independently represents H, OH, or COOM respectively; M independently represents H, Na, K, NH_4, or alkanolamine respectively; and n represents an integer from 0 to 5.

[Claim 3]

The laundry detergent composition described in Claim 1 containing Component (D): enzyme.

[Claim 4]

The laundry detergent composition described in Claim 1 or Claim 3 wherein the mass ratio that is presented as Component (B) / Component (C) is 0.02 to 1.

[Claim 5]

The laundry detergent composition described in any one of Claims 1, 3, or 4 wherein the content of Component (B) above is 0.2 to 1% by mass against the total mass of the laundry detergent composition."

3. Grounds for Invalidation Argued in the JPO Trial

The Plaintiff argued the following grounds for invalidation in the JPO Trial. In addition, the Plaintiff also argued the same grounds for invalidation concerning Claims 2 and 6 before they were deleted by the Correction; however, they are summarized to the extent of arguments on Inventions (Claim 1 and Claims 3 through 5 after the Correction) hereinafter.

(1) Grounds for Invalidation 1 (lack of novelty)

The Inventions are inventions described in Exhibit Ko 1 (IP.com, "Biocidal Compositions containing 4,4'-dichloro 2-hydroxy diphenylether (DCPP)," The IP.com Journal, IPCOM000213522D, December 20, 2011). Therefore, it falls under an invention set forth in Article 29, paragraph (1), item (iii) of the Patent Act and it cannot be patented. Therefore, the patents related to the Inventions fall under Article 123, paragraph (1), item (ii) of said Act and shall be invalidated.

(2) Grounds for Invalidation 2 (lack of an inventive step)

The Inventions could have been easily made by a person ordinarily skilled in the art based on the invention stated in Exhibit Ko 1 and the statements in Exhibits Ko 2 through 6, before the filing of the application. Therefore, they cannot be patented pursuant to Article 29, paragraph (2) of the Patent Act. Therefore, the patents related to the Inventions fall under Article 123, paragraph (1), item (ii) of said Act and shall be invalidated.

(3) Grounds for Invalidation 3 (violation of the support requirement)

The Inventions where the existence of "Component (E): zinc sulfate monohydrate" has not been specified and Component (C) is not specified as "C-1: Methyl glycine diacetic acid (MGDA)" are beyond the scope described so that a person ordinarily skilled in the art can understand that the problem of the invention can be solved.

Therefore, the descriptions of the claims of the Inventions do not fulfill the requirement specified in Article 36, paragraph (6), item (i) of the Patent Act and the patents related to the Inventions fall under Article 123, paragraph (1), item (iv) of said Act and should be invalidated.

4. Grounds for the JPO Decision

The grounds for the JPO Decision are as stated in Attachment 1 "Written Trial Decision (copy)" and the summary of the decision on the Plaintiff's argument is stated below.

(1) Grounds for Invalidation 1 and Grounds for Invalidation 2

A. Invention stated in Exhibit Ko 1

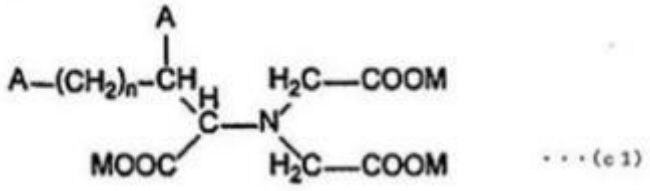
Exhibit Ko 1 is disclosed concerning an antimicrobial composition containing 4,4'-dichloro-2-hydroxydiphenyl ether (DCPP) and it is found that the following invention (hereinafter referred to as "Exhibit Ko 1 Invention") is stated as an antimicrobial liquid laundry detergent related to Formulation LI.

"An antimicrobial liquid laundry detergent comprised of:

8 to 17wt% of NaLAS that is linear alkylbenzene sulfonates (LAS);

5 to 25wt% of NI (7EO) that is R-(OCH_2CH_2)nOH (R represents alkyl chain of C12 to

C15; n=7);
4 to 15wt% of SLES (3EO) that is C_{12}-C_{18} alkyl polyethoxylated (3.0) sulfate;
0.5 to 7wt% of soap;
0.1 to 0.3wt% of citric acid;
1 to 8wt% of glycerol;
0.5 to 8wt% of propylene glycol;
0 to 4wt% of sodium chloride;
0.5 to 5wt% of triethanolamine;
0.01 to 1wt% of perfume;
0.001 to 0.01wt% of protease;
0.001 to 0.01wt% of amylase;
0.001 to 0.01wt% of lipase;
0.02 to 0.5wt% of fluorescent brightener;
0.01 to 0.5wt% of DCPP that is 4,4'-dichloro-2-hydroxydiphenyl ether;
0wt% of cumenesulfonic acid sodium salt;
0.1 to 5wt% of MGDA (Trilon (R) M);
0wt% of phenoxyethanol; and
remainder of water, impurities, and minor components."
B. Common features and differences between Invention 1 and Exhibit Ko 1 Invention
[Common features]
"The laundry detergent composition comprises the following (excluding composition containing silver dihydrogen citrate):
Component (A): anionic surfactant (excluding fatty acid salts with the carbon number from 10 to 20);
Component (B): a phenol-type antimicrobial agent containing 4,4'-dichloro-2-hydroxydiphenyl ether;
Component (C): an aminocarboxylic acid-type chelating agent containing a compound represented by the following Formula (c1); and
non-ionic surfactant.
[Chemical Formula 1]



In the Formula (cl), A independently represents H, OH, or COOM respectively; M independently represents H, Na, K, NH_4, or alkanolamine respectively; and n represents an integer from 0 to 5."

[Difference 1]

In Invention 1, the content of "Component (C): aminocarboxylic acid-type chelating agent containing a compound represented by the following Formula (c1)" is "0.02 to 1.5% by mass," while in Exhibit Ko 1 Invention, the content of "MGDA (Trilon $^{(R)}$ M)" that corresponds to said ingredient is "0.1 to 5wt%."

[Difference 2]

In Invention 1, "Component (G)" that is a "non-ionic surfactant" is "at least one of the types represented by the following General Formula (I) or (II);

R^2-C(=O)O-[$(EO)_s$/$(PO)_t$]-$(EO)_u$-R^3...(I)

R^4-O-[$(EO)_v$/$(PO)_w$]-$(EO)_x$-H...(II)

(In Formula (I), R^2 represents a hydrocarbon radical with the carbon number from 7 to 22; R^3 represents an alkyl radical with the carbon number from 1 to 6; s represents the average number of repetitions of EO and is a number from 6 to 20; t represents the average number of repetitions of PO and is a number from 0 to 6; u represents the average number of repetitions of EO and is a number from 0 to 20; EO represents an oxyethylene radical; and PO represents an oxypropylene radical.

In Formula (II), R^4 represents a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14; v and x independently represent the average number of repetitions of EO and the number of v + x is from 3 to 20; PO represents an oxypropylene radical; w represents the average number of repetitions of PO and is a number from 0 to 6);" and "the content of Component (G) is 20 to 40% by mass against the total mass of the laundry detergent composition," while in Exhibit Ko 1 Invention, a "non-ionic surfactant" is "NI (7EO) that is R-(OCH_2CH_2)nOH (R represents C12 to C15 alkyl chain; n=7)" and the content is "5 to 25wt%."

[Difference 3]

In Invention 1, "the mass ratio that is represented by Component (A) / Component (C) (A/C ratio) is 10 to 100," while in Exhibit Ko 1 Invention, the total sum of the content of "NaLAS that is linear alkylbenzene sulfonates (LAS)," which corresponds to "Component (A)," the content of "SLES (3EO) that is C_{12}-C_{18} alkyl polyethoxylated (3.0) sulfate," and the content of "cumenesulfonic acid sodium salt" is (8+4+0) to (17+15+0)wt%, which means "12 to 32wt%," and the content of "MGDA (Trilon $^{(R)}$ M)," which corresponds to "Component (C)," is "0.1 to 5wt%."

C. Decision on Differences

(A) Difference 2

a. Difference in compound type

According to the statements in Exhibit Ko 14 (Exhibit Otsu 2 in the JPO Trial), it can be identified that natural alcohols have linear hydrocarbon radicals comprised of an even number of carbons, while synthetic alcohols (excluding those made of ethylene and obtained by the Ziegler method) contain an odd number of or branched alkyl radicals.

Regarding the compound of Formula (II) in Invention 1, "R^4 represents a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14." Therefore, it can be said that cases where the number of carbons of R^4 is an odd number (for example, 13 or 15) or cases where R^4 is a branched alkyl radical are excluded.

At the same time, according to the statements in Exhibits Ko 15 and 16 (Exhibits Otsu 3 and 4 in the JPO Trial), "NI (7EO) that is R-(OCH_2CH_2)nOH (R represents C12 to C15 alkyl chain; n=7)" in Exhibit Ko 1 Invention is Neodol (registered trademark) 25-7 (Shell Chemicals), and the carbon number distribution of alkyl chain R is estimated to be: C_{12} is 21%, C_{13} is 29%, C_{14} is 25%, and C_{15} is 25%. In addition, alkyl chain R is not limited to normal chains, but is estimated to contain those with branches.

Based on the above, the compound in Formula (II) in Invention 1 and "NI (7EO) that is R-(OCH_2CH_2)nOH (R represents C12 to C15 alkyl chain; n=7)" in Exhibit Ko 1 Invention are different in whether the carbon number of R^4 consists of even numbers of carbons 12 and 14 only or whether R^4 consists of also including odd numbers of 13 and 15, and whether R^4 consists of normal chains only or whether R^4 also contains those with branches. These constitute a substantial difference.

Including the point that "R^4 represents a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14," there are no statements in Exhibit Ko 1 that a "non-ionic surfactant" is "at least one of the types represented by the following General Formula (I) or (II)" as stated in Invention 1. It is also not stated in Exhibits Ko 2 through 6.

Consequently, regarding Exhibit Ko 1 Invention, a person ordinarily skilled in the art could not have easily replaced a "non-ionic surfactant" from "NI (7EO) that is R-(OCH_2CH_2)nOH (R represents C12 to C15 alkyl chain; n=7)" to "at least one of the types represented by the following General Formula (I) or (II)" as stated in Invention 1.

b. Difference in content

The content of "Component (G)" that is a "non-ionic surfactant" (20 to 40% by mass against the total mass of the laundry detergent composition) in Invention 1 and the content of "NI (7EO) that is R-(OCH_2CH_2)nOH (R represents C12 to C15 alkyl chain;

n=7)" that is a "non-ionic surfactant" in Exhibit Ko 1 Invention (5 to 25wt%) partially overlap at least in the range of 20 to 25% by mass. However, the numerical range of the latter is not included completely in the numerical range of the former and does not always fulfill the content of the former. Therefore, the aforementioned contents constitute a substantial difference.

In addition, "NI (7EO) that is "R-(OCH_2CH_2)nOH (R represents C12 to C15 alkyl chain; n=7)" for which the carbon number of alkyl chain R is 12 or 14 from among those in Exhibit Ko 1 Invention is 21 + 25 = 46%, and the carbon number of the remaining 54% is considered to be 13 or 15. Based on the above, the content of compound in Exhibit Ko 1 Invention that corresponds to compound of Formula (II) in Invention 1 is (5 × 46/100) to (25 × 46/100)wt%, which means 2.3 to 11.5wt% when focusing only on the carbon number. If those having branches that are not considered to be natural alcohol-derived are deducted, the content becomes even less. Therefore, it does not overlap with the content specified in Invention 1 (20 to 40% by mass against the total mass of laundry detergent composition) at all and this obviously constitutes a difference.

Furthermore, the fact that the content of "Component (G)" that is a "non-ionic surfactant" is "20 to 40% by mass against the total mass of the laundry detergent composition" is not stated in Exhibit Ko 1 nor in Exhibits Ko 2 through 6.

Consequently, regarding Exhibit Ko 1 Invention, where the content of "NI (7EO) that is R-(OCH_2CH_2)nOH (R represents C12 to C15 alkyl chain; n=7)," which is a "non-ionic surfactant," is "5 to 25wt%," a person ordinarily skilled in the art could not have easily changed the content of "Component (G)" that is a "non-ionic surfactant" to "20 to 40% by mass against the total mass of the laundry detergent composition."

(B) Difference 3

In Exhibit Ko 1 Invention, the total sum of the content of "NaLAS that is linear alkylbenzene sulfonates (LAS)" which corresponds to "Component (A)," the content of "SLES (3EO) that is C_{12}-C_{18} alkyl polyethoxylated (3.0) sulfate (3.0)," and the content of "cumenesulfonic acid sodium salt" is (8+4+0) to (17+15+0)wt%, which means "12 to 32wt%," and the content of "MGDA (Trilon $^{(R)}$ M)," which corresponds to "Component (C)," is "0.1 to 5wt%." Therefore, "the mass ratio that is represented by Component (A) / Component (C) (A/C ratio)" is 12/5=2.4 at a minimum and 32/0.1=320 at a maximum and it overlaps with the numerical range (10 to 100) specified in Invention 1. However, the numerical range from 2.4 to 320 includes a numerical range (2.4 or more and less than 10, and 100 or more and 320 or less) that is not included in the numerical range (10 to 100) specified in Invention 1 and does not always fulfill the

numerical range (10 to 100) specified in Invention 1. Therefore, the A/C mass ratio constitutes a substantial difference.

The fact that "the mass ratio that is represented by Component (A) / Component (C) (A/C ratio) is 10 to 100" is not stated in Exhibit Ko 1 nor in Exhibits Ko 2 through 6.

Consequently, regarding Exhibit Ko 1 Invention, where the possible value of "the mass ratio that is represented by Component (A) / Component (C) (A/C ratio)" is 2.4 at a minimum and 320 at a maximum, a person ordinarily skilled in the art could not have easily limited the mass ratio to "10 to 100."

(C) Difference 1

The content (0.02 to 1.5% by mass) of "Component (C): aminocarboxylic acid-type chelating agent containing a compound represented by the following Formula (c1)" in Invention 1 and the content (0.1 to 5wt%) of "MGDA (Trilon $^{(R)}$ M)" in Exhibit Ko 1 Invention partially overlap at least to the extent of 0.1 to 1.5% by mass. However, the numerical range of the latter is not completely included in the numerical range of the former and does not always fulfill the content of the former. Therefore, the aforementioned contents constitute a substantial difference.

In addition, the fact that "Component (C): aminocarboxylic acid-type chelating agent containing a compound represented by the following Formula (c1)" is "0.02 to 1.5% by mass" is not stated in Exhibit Ko 1 nor in Exhibits Ko 2 through 6.

Therefore, regarding Exhibit Ko 1 Invention, where the content of "MGDA (Trilon $^{(R)}$ M)" that corresponds to "Component (C)" in Invention 1 is "0.1 to 5wt%," a person ordinarily skilled in the art could not have easily changed the content to "0.02 to 1.5% by mass."

D. Conclusion

As mentioned above, Invention 1 is not Exhibit Ko 1 Invention and does not fall under the invention set forth in Article 29, paragraph (1), item (iii) of the Patent Act. Invention 1 could have easily been made by a person ordinarily skilled in the art based on Exhibit Ko 1 Invention and statements in Exhibits Ko 2 through 6. Therefore, Invention 1 does not fall under an invention that can be patented pursuant to the provisions of paragraph (2) of the same Article.

Inventions 3 through 5 cited Invention 1 directly or indirectly and the matters specifying the inventions are further added to them. Therefore, they are the same as Invention 1.

(2) Grounds for Invalidation 3

According to the statement in paragraph [0004] in the Description, the problems of the Inventions are found to be "to provide a laundry detergent composition having an

excellent deodorizing effect where a sufficient deodorizing effect can be obtained even in an environment where clothes are wet and bacteria can easily grow."

According to the statements in the Description on the assessment results of the deodorizing effect using working examples of a laundry detergent composition that fulfills the composition specified in Invention 1 and comparative examples of laundry detergent compositions that do not fulfill that composition, a person ordinarily skilled in the art could have solved the aforementioned problem by at least containing Component (A), Component (B), and Component (C). On the other hand, a person ordinarily skilled in the art could have fully recognized that the aforementioned problem cannot be resolved if at least any one of the components from among Component (A), Component (B), and Component (C) is not contained.

Component (C) that is used in the aforementioned working examples is limited to a compound where A is H, M is Na, and n is 0 in Formula (c1), which is methyl glycine diacetic acid (MGDA). Even if a compound where other options are combined in relation to A, M, and n is used as Component (C), a person ordinarily skilled in the art could have recognized that the same or similar deodorizing effect as the aforementioned working examples can be obtained and the aforementioned problem can be solved.

Therefore, Invention 1 is not considered to exceed the range stated in the detailed explanation of the invention in the Description. In addition, Inventions 3 through 5 cited Invention 1 directly or indirectly and the matters specifying the inventions are further added to them. Therefore, they are the same as Invention 1.

5. Grounds for rescission of the JPO Decision argued by the Plaintiff

(1) Grounds for Rescission 1

(1) Error in the determination on the novelty of the Inventions against Exhibit Ko 1 Invention

(2) Grounds for Rescission 2

Error in the determination on an inventive step of the Inventions against Exhibit Ko 1 Invention

(3) Grounds for Rescission 3

Error in the determination on the existence of violation of the support requirement of the Inventions

No. 4 Decision of this court

1. Technical meaning of the Inventions

(1) Claims

The claims related to the Patent are as stated in No. 2, 2. above.

(2) Statements in the Description

The statements in the Description are as stated in [Detailed explanation of the invention] in Attachment 2 "Patent Gazette" (Exhibit Ko 7).

(3) Technical meaning of the Inventions

According to the statements in the claims in (1) above and in the Description in (2) above, the technical meaning of the Inventions is found to be as follows.

A. Technical field

The Inventions are related to a laundry detergent composition. (Paragraph [0001])

B. Background art

In recent years, due to an increase in sanitary awareness, laundry detergent compositions are required not only to remove stains attached to clothes (cleaning effect) but also to suppress unpleasant odors generated from clothes (deodorizing effect). It is considered that bacteria and stains attached to clothes are involved in the generation of unpleasant odors from clothes. The bacteria remaining on clothes at the time of washing proliferate with stains such as protein as a nutrient source in the drying process of the clothes to generate an odor. Therefore, controlling bacteria during washing and during drying after washing contributes to a high deodorizing effect. (Paragraph [0002])

In a conventional laundry detergent composition to which a deodorizing effect is added, an antimicrobial agent such as a cationic surfactant is blended in to suppress the proliferation of bacteria. However, the blending effect of the laundry detergent composition cannot be exhibited when an anionic surfactant is used concurrently, and there is the problem that a sufficient bacteria suppression effect cannot be obtained. (Paragraph [0002])

Therefore, a laundry detergent composition containing a phenol-type antimicrobial agent such as triclosan, which is less likely to be affected by a coexisting anionic surfactant, has been proposed (for example, see Unexamined Patent Application Publication No. 2001-146681). (Paragraph [0002])

C. Problem to be solved by the Inventions

However, with regard to the laundry detergent composition described in the aforementioned Patent Gazette, a sufficient deodorizing effect cannot be obtained in an environment where clothes are wet and bacteria can easily grow. Therefore, the present invention has been made in view of the aforementioned circumstances, and an object of the present invention is to provide a laundry detergent composition having an excellent deodorizing effect. (Paragraph [0004])

In other words, the problem of the Inventions is to provide a laundry detergent composition having an excellent deodorizing effect even under an environment where

clothes are wet and bacteria can easily grow."

D. Means to solve the problem

The present inventors found that the aforementioned problem can be solved by combining a specific anionic surfactant, a phenol-type antimicrobial agent, and an aminocarboxylic acid-type chelating agent, and completed the Inventions. (Paragraph [0005])

E. Effect of the Inventions

According to the Inventions, it is possible to provide a laundry detergent composition having an excellent deodorizing effect. (Paragraph [0007])

F. Mode for embodying the invention

The laundry detergent composition in the Inventions is a composition containing the specified amount or the specified mass ratio described in each Claim of the Inventions of the following Component (A), Component (B), Component (C), and Component (G). (Paragraphs [0008] through [0034])

(A) Component (A): anionic surfactant (excluding fatty acid salts with the carbon number from 10 to 20)

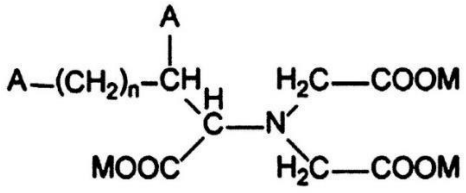
Component (A) is at least one type of anionic surfactant, excluding fatty acid salts with the carbon number from 10 to 20, and can exhibit deodorizing effect and enzyme stability regardless of the type of surfactant. (Paragraphs [0009] through [0012])

(B) Component (B): a phenol-type antimicrobial agent

Component (B) is a phenol-type antimicrobial agent containing 4,4'-dichloro-2-hydroxydiphenyl ether (trivial name: diclosan) and it gives an antimicrobial property to textile products, such as clothes, etc., after washing. If it co-exists with an anionic surfactant in the laundry detergent composition, an antimicrobial property can be exhibited without impairing the washability of the anionic surfactant. (Paragraphs [0013] through [0018])

(C) Component (C): aminocarboxylic acid-type chelating agent containing a compound represented by the following Formula (c1)

Component (C) is an aminocarboxylic acid-type chelating agent containing a compound represented by the following Formula (c1), and a higher deodorizing effect can be obtained by a combination of Component (C) and Component (B). In addition, Component (C) can improve washing performance to which Component (C) contributes (for example, in the case of protease, washing performance for protein stains) without impairing the stability of enzymes (Component (D)).



· · · (c 1)

(In the Formula (cl), A independently represents H, OH, or COOM respectively; M independently represents H, Na, K, NH_4, or alkanolamine respectively; and n represents an integer from 0 to 5.)

The content of Component (C) is preferably 0.01 to 2% by mass, more preferably 0.02 to 1.5% by mass, against the total mass of the laundry detergent composition. If the content of Component (C) is more than the lower limit, sufficient deodorizing effect and enzyme stability can be easily obtained. If the content of Component (C) is lower than the upper limit, it is preferable in terms of economy. (Paragraphs [0019] through [0023])

The mass ratio that is represented by Component (A) / Component (C) (A/C ratio) is preferably 5 to 700, more preferably 10 to 560, and even more preferably 10 to 100. If the A/C ratio is set within the aforementioned numerical range, a sufficient deodorizing effect and enzyme stability can be obtained.

(D) Component (G): at least one type of non-ionic surfactant that is represented by General Formula (I) or (II).

In addition to Components (A), (B), and (C), it can contain enzymes (Component (D)), metal compounds (Component (E)), and surfactants other than Component (A) (Component (G)), etc. and, as examples of Component (G), there are fatty acid salts with the carbon number from 10 to 20, non-ionic surfactants, ampholytic surfactants, etc.

Among the above, those represented by the following General Formula (I) or (II) are preferable as non-ionic surfactants.

R^2-C(=O)O-[$(EO)_s$/$(PO)_t$]-$(EO)_u$-R^3...(I)

R^4-O-[$(EO)_v$/$(PO)_w$]-$(EO)_x$-H...(II)

In Formula (I), R^2 represents a hydrocarbon radical with the carbon number from 7 to 22; R^3 represents an alkyl radical having the carbon number from 1 to 6; s represents the average number of repetitions of EO and is a number from 6 to 20; t represents the average number of repetitions of PO and is a number from 0 to 6; u represents the average number of repetitions of EO and is a number from 0 to 20; EO represents an oxyethylene radical; and PO represents an oxypropylene radical.

In Formula (II), R^4 represents hydrocarbons with the carbon number from 6 to 22, preferably 10 to 20, and more preferably 10 to 18. R^4 may be straight chain or branched chain. R^4 is preferably a secondary alcohol-derived alkyl radical with the carbon number from 12 to 14 in concrete terms.

In Formula (II), v represents the average number of repetitions of EO and is a number from 3 to 20; w represents the average number of repetitions of PO and is a number from 0 to 6; x represents the average number of repetitions of EO and is a number from 0 to 20; EO represents an oxyethylene radical; and PO represents an oxypropylene radical.

As Component (G), a non-ionic surfactant is preferable in terms of washability and liquid stability. It is preferable to be 20 to 40% by mass against the total mass of the laundry detergent composition.

(Paragraphs [0026], [0030] through [0034], and [0039])

(4) Working examples and measurement of deodorizing effect in the Description

The Description contains statements concerning the assessment of the deodorizing effect using laundry detergent compositions, namely, working examples 1 through 22 that are obtained by preparing multiple compositions for each of Component (A), Component (B), Component (C), and Component (G) and by combining the compositions of each component in various percentages, and comparative examples 1 through 8 (hereinafter referred to as the "Deodorizing Effect Assessment"). (Paragraph [0046] and after)

The method of the Deodorizing Effect Assessment is stated below.

Blended shirts (60% cotton, 40% polyester) were worn by 11 men in their 30s to 40s for 14 hours, and then washed (with tap water having a water temperature of about 15°C and a hardness of about 3°DH, at a bath ratio of 30 times) using the detergent composition of each example in a normal course of a washing machine (JW-Z23A type, manufactured by Haier Group). 10 mL of each of the laundry detergent compositions was injected into the washing machine with 30 L of tap water. Only in working examples 21 and 22, 20 mL of the laundry detergent composition was injected in 30 L of tap water. Thus, washing was conducted.

After the washing, the shirts were dried in a room at about 25°C, and a relative humidity of 60% RH for 12 hours, and then used at home for 2 days without washing. They were not washed while being used at home. After being used for 2 days, the shirts were collected in a manner sealed in a plastic bag and stored for one day at 25°C. Then, they were used as fabric samples subject to odor assessment.

The odor of the fabric samples subject to odor assessment was assessed by 11

experts using a 6-step odor intensity assessment method. The average score of the assessment points obtained was determined and was assessed using the following criteria.

A. Deodorizing effect assessment standard

0 points: No unusual odor at all.

1 (one) point: Unusual odor can hardly be sensed.

2 points: Unusual odor can be sensed slightly.

3 points: Unusual odor can be sensed as slightly strong.

4 points: Unusual odor can be sensed strongly.

5 points: Strong unusual odor can be sensed.

B. Criteria

◎: Average points of 11 experts is 0.0 points or more and less than 1.5 points.

○: Average points of 11 experts is 1.5 points or more and less than 2.5 points.

△: Average points of 11 experts is 2.5 points or more and less than 3.5 points.

×: Average points of 11 experts is 3.5 points or more and 5.0 points or less.

2. Grounds for Rescission 1 (Error in the determination on the novelty of the Inventions against Exhibit Ko 1 Invention)

(1) The details of the statements in Exhibit Ko 1 are as indicated in 1. in Attachment 3 "Statements in Documents."

According to the details of the statements in Exhibit Ko 1, it is found that Exhibit Ko 1 Invention (No. 2, 4. (1), A. above), which is found by the JPO Decision, is stated in Exhibit Ko 1. There are no disputes between parties regarding the fact that Exhibit Ko 1 Invention is stated in Exhibit Ko 1.

In light of the details of Exhibit Ko 1 Invention, common features and differences between Invention 1 and Exhibit Ko 1 Invention are found to be as stated in No. 2, 4. (1) B. above as found by the JPO Decision.

(2) Difference 2

A. Common general technical knowledge related to Difference 2

In Exhibit Ko 10 (2. in Attachment 3 "Statements in Documents"), Exhibit Ko 11 (3. in Attachment 3 "Statements in Documents"), and Exhibit Ko 14 (4. in Attachment 3 "Statements in Documents"), there are statements as stated in 2. thorough 4. in Attachment 3 "Statements in Documents."

According to the details of these statements, concerning alkyl radical in AE (alcohol ethoxylate) that is represented by a chemical formula, R-O-(CH_2CH_2O)n-H, the ingredients that are contained in general detergents are mainly alkyl radical "R" that is C12 to C15. As raw materials of alkyl radical "R," both oil and fat-derived (natural

source-derived) higher alcohols (natural alcohols) and petroleum-derived higher alcohols (synthetic alcohols) are used. The natural alcohols have linear hydrocarbon radicals comprised of an even number of carbons, while petroleum-derived synthetic alcohols (excluding those made of ethylene and obtained by the Ziegler method) contain those having an odd number of carbons or branched hydrocarbon radicals. This is found to have been common general technical knowledge at the time of the Application Date.

The General Formula (II) of NI (7EO) in Exhibit Ko 1 Invention and that of Component (G) in Invention 1 correspond to AE (alcohol ethoxylate) (Exhibits Ko 10, 11, 31, and 32, and the entire import of oral arguments).

B. Comparison between Component (G) in Invention 1 and NI (7EO) in Exhibit Ko 1 Invention

R^4 in a compound that is represented by General Formula (II) "R^4-O-[(EO)v/(PO)w]-(EO)x-H" from among Component (G) that is a non-ionic surfactant in Invention 1 is stated to be a "natural alcohol-derived hydrocarbon with the carbon number of 12 and 14." According to the common general technical knowledge stated in A. above, this is found to mean a linear hydrocarbon with the carbon number of 12 and 14. Based on the above, a hydrocarbon radical with an odd number of carbons or a branched chain does not fall under R^4 above and a compound having such hydrocarbon radical is found to be excluded from the compound represented by General Formula (II).

On the other hand, a non-ionic surfactant contained in Exhibit Ko 1 Invention is NI (7EO), which is "R-O-(CH_2CH_2O)nOH (R represents C12 to C15 alkyl chain; n=7)." This structural formula of NI (7EO) is common also in the case where, in General Formula (II) of Component (G) in Invention 1, w = 0 and v + x is 7, except for the difference of "R" and "R^4" (the structural formula for "EO" (oxyethylene radical) is "-CH_2CH_2O-" (Exhibits Ko 10 and 37)).

However, there are no more indications than the phrase, "R is an alkyl chain with C12 to C15" concerning NI (7EO) in Exhibit Ko 1 Invention and it is not found to exclude hydrocarbon radicals with an odd number of carbons (13 or 15) or a branched chain nor to limit to those derived from natural alcohols.

Then, according to the common general technical knowledge stated in A. above, a person ordinarily skilled in the art could have recognized that, concerning alkyl radical "R" in Exhibit Ko 1 Invention, both natural alcohol-derived alkyl radical "R" having linear hydrocarbon radicals comprised of an even number of carbons and synthetic alcohol-derived alkyl radical "R" having hydrocarbon radicals with an odd number of carbons or a branched chain can be used as "C12 to C15 alkyl chain."

Based on the above, Difference 2 is considered to be a substantial difference and is

not found to be a formal difference.

C. Determination on the Plaintiff's argument

The Plaintiff argued as stated in No. 3, 1. [Plaintiff's Argument] (1) above that Difference 2 is a formal difference and the determination of the JPO Decision contains an error.

In this regard, the JPO Decision found that NI (7EO) in Exhibit Ko 1 refers to a specific product, Neodol 25-7, and determined that Difference 2 is a substantial difference based on this finding. However, there is no ground to find that NI (7EO) refers to Neodol 25-7. In other words, in the part of Formulation LI in Exhibit Ko 1, there is only a statement concerning NI (7EO) that "NI (7EO) refers to R-(OCH_2CH_2)nOH and R refers to an alkyl chain of C12 to C15, and n=7" (statement in 1. (7) in Attachment 3 "Statements in Documents") and the name of the goods is not stated. In addition, in paragraph [0034] in Exhibit Ko 15 (Japanese Translation of PCT International Application Publication No. 2014-529660), there is a statement that "NI 7EO is an C12-15 alcohol ethoxylate 7EO non-ionic Neodol (registered trademark) 25-7 (Shell Chemicals)." This is interpreted to be a statement of specific goods used as NI (7EO) in a working example in Exhibit Ko 15 and does not serve as a basis to interpret that NI (7EO) refers to Neodol 25-7. However, according to the explanations in A. and B. above, even if NI (7EO) does not refer to Neodol 25-7, there is no impact on the conclusion that Difference 2 is found to be a substantial difference.

Even if a natural alcohol-derived alkyl radical having linear hydrocarbon radicals comprised of an even number of carbons can be used as an alkyl radical R in Exhibit Ko 1 Invention, a synthetic alcohol-derived alkyl radical having hydrocarbon radicals with an odd number of carbons or a branched chain may also be used. Therefore, it is different from the fact that R^4 in General Formula (II) of Component (G) in Invention 1 is limited to "natural alcohol-derived hydrocarbons with the carbon number of 12 and 14" and it cannot be construed to be only a formal difference since the former includes the latter.

In addition, examining the content of the Plaintiff's other arguments in No. 3, 1. [Plaintiff's Argument] (1) above, the conclusion in B. above will not be changed.

Consequently, the aforementioned Plaintiff's argument cannot be accepted.

(3) Difference 1

A. The content of MGDA (Trilon M) in Exhibit Ko 1 Invention, "0.1 to 5wt%," partially overlaps with the content of Component (C) in Invention 1, "0.02 to 1.5% by mass." However, the range of the content ratio in Exhibit Ko 1 Invention includes a range that does not correspond to the range of the content ratio in Invention 1.

Therefore, Difference 1 between Invention 1 and Exhibit Ko 1 Invention is a substantial difference and it is not found to be a formal difference.

B. Determination on the Plaintiff's argument

As stated in No. 3, 1. [Plaintiff's Argument] (2) above, the Plaintiff argued that Difference 1 is only a formal difference.

However, the content of Component (C) in Invention 1 is 0.02 to 1.5% by mass and the content of MGDA (Trilon M) in Exhibit Ko 1 Invention is 0.1 to 5wt% (% by mass). As stated in A. above, the range of the content ratio in Exhibit Ko 1 Invention includes a range that does not correspond to the range of content ratio in Invention 1. Then, just because numerical values partially overlap, it does not mean that Difference 1 should be construed as only a formal difference.

In Formulation XXXIV in Exhibit Ko 1 cited by the Plaintiff, there is a statement that "3.13% MGDA (Trilon® M, 40% active, BASF, used as delivered)." It is natural to read this statement to mean that Trilon M, which contains MGDA at 40%, is used by diluting it so that the percentage of MGDA becomes 3.13%. Therefore, the aforementioned formulation is not found to add 1.252% by mass of MGDA. In addition, Exhibit Ko 1 Invention is based on the addition of Formulation LI in Exhibit Ko 1. If the content of MGDA in the formulation other than LI that is presented in Exhibit Ko 1 is included in the range of the content ratio of Component (C) in Invention 1, it does not result in construing that Difference 1 between Invention 1 and Exhibit Ko 1 Invention is only a formal difference.

Consequently, the aforementioned Plaintiff's argument cannot be accepted.

(4) Difference 3

A. As the JPO Decision pointed out in the finding of Difference 3 (No. 2, 4. (1) B. above), in Exhibit Ko 1 Invention, the total of the components that are anionic surfactants corresponding to Component (A) is 12 to 32wt% and the content of MGDA (Trilon M) corresponding to Component (C) is 0.1 to 5wt%; however, the A/C ratio is not specified. Based on the range of the content of both components above, the A/C ratio is calculated to be 2.4 at a minimum and 320 at a maximum.

On the other hand, in Invention 1, it is stated that "the mass ratio that is represented by Component (A) / Component (C) (A/C ratio) is 10 to 100."

Based on the above, the range of the A/C ratio that is calculated in Exhibit Ko 1 Invention includes a range that does not correspond to the range of the A/C ratio in Invention 1.

Therefore, Difference 3 between Invention 1 and Exhibit Ko 1 Invention is a substantial difference and it is not found to be a formal difference.

B. Determination on the Plaintiff's argument

As stated in No. 3, 1. [Plaintiff's Argument] (3) above, the Plaintiff argues that Difference 3 is only a formal difference.

However, in the same way as the Plaintiff's argument related to Difference 1, it does not mean that Difference 3 should be construed to be only a formal difference based on the fact that the range of the A/C ratio calculated in Exhibit Ko 1 Invention partially overlaps the range of the A/C ratio in Invention 1. In addition, just because the range of the A/C ratio that is calculated in relation to a formulation other than Formulation LI in Exhibit Ko 1 is included in the range of the A/C ratio in Invention 1, it does not mean that Difference 3 should be construed to be only a formal difference.

Consequently, the aforementioned Plaintiff's argument cannot be accepted.

(5) Based on the above, all of Differences 1 through 3 between Invention 1 and Exhibit Ko 1 Invention are considered to be substantial differences. Therefore, Invention 1 and Exhibit Ko 1 Invention are not found to be the same.

In addition, Inventions 3 through 5 cited Invention 1 directly or indirectly and the matters specifying the inventions are further added to them. Therefore, in the same way as Invention 1, these inventions are not found to be the same as Exhibit Ko 1 Invention.

Consequently, Grounds for Rescission 1 are groundless.

3. Grounds for Rescission 2 (Error in the determination on an inventive step of Inventions against Exhibit Ko 1 Invention)

(1) Difference 2

A. Common general technical knowledge related to Difference 2

As stated in 2. (2) above, according to Exhibits Ko 10, 11, and 14, concerning the alkyl radical in AE (alcohol ethoxylate), it is found to be common general technical knowledge at the time of the Application Date that an alkyl radical that is C12 to C15 is mainly contained in common detergents. In addition, according to Exhibit Ko 10, it is also found to have been common general technical knowledge at the time of the Application Date that, recently, the difference in price between oil and fat-derived (natural source-derived) higher alcohols (natural alcohols) and petroleum-derived higher alcohols (synthetic alcohols) has become minimal and natural oil and fat-derived higher alcohols are often used.

In addition, in Exhibit Ko 36 (5. in Attachment 3 "Statements in Documents") and Exhibit Ko 37 (6. in Attachment 3 "Statements in Documents"), there are statements as stated in 5. and 6. in Attachment 3 "Statements in Documents" respectively. According to these statements, it is found to have been common general technical knowledge at the time of the Application Date that natural alcohols are used as raw materials of alkyl

radical with the carbon number from 12 to 15 in AE (alcohol ethoxylate).

Based on the above, the following are found to have been common general technical knowledge at the time of the Application Date: AE (alcohol ethoxylate) contained in general detergents is mainly an alkyl radical having C12 to C15 (carbon number from 12 to 15); as raw materials of C12 to C15 alkyl radical, oil and fat-derived natural alcohols having linear hydrocarbon radicals comprised of an even number of carbons (linear alcohols with the carbon number of 12 and 14) are generally used in the same way as petroleum-derived synthetic alcohols; and, in particular, since price differences have become smaller in recent years, natural alcohols (linear alcohols with the carbon number of 12 and 14) are often used.

On the other hand, it is not found that there is the common general technical knowledge that either natural alcohol-derived hydrocarbon or synthetic alcohol-derived hydrocarbon is more suitable for a laundry detergent composition than the other.

B. Technical meaning of Component (G) in Invention 1

Paragraph [0026] in the Description determines to call surfactant other than Component (A) as Component (G). In paragraph [0008], it is stated that "The laundry detergent composition in the present invention is a compound containing the following Component (A), Component (B), and Component (C)" and Component (G) is not positioned as an essential composition for a laundry detergent in the Inventions in said paragraph. In addition, according to paragraph [0026], Component (G) is only positioned as one of the other components that "may be contained" in addition to Components (A) through (C).

In Invention 1, Component (G) is specified as any one of the types represented by General Formula (I) or (II), and R^4 in General Formula (II) is determined to be "natural alcohol-derived hydrocarbon with carbon number 12 and 14." At the same time, in the Description, there are statements that "R^4 may be linear or branched chain" and "R^4 is preferably a secondary alcohol-derived alkyl radical with the carbon number from 12 to 14 in concrete terms" (paragraph [0034]). However, there is no statement in the Description that R^4 is preferably a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14 and it is not clear based on the statements in the Description why R^4 is determined to be natural alcohol-derived hydrocarbon with the carbon number of 12 and 14 in General Formula (II) of Component (G) in the Invention.

In addition, in the Deodorizing Effect Assessment stated in the Description, laundry detergent compositions, that is, working examples 1 through 22, which are obtained by preparing multiple compositions for each of Component (A), Component (B), Component (C), and Component (G) and by combining the compositions of each

component in various percentages, and comparative examples 1 through 8 are used. Components (G) used in the Deodorizing Effect Assessment are 5 types, namely, G-1, G-2, G-2', G-3, and G-4, of which those corresponding to Component (G) specified in Invention 1 are G-2, G-2', and G-3. However, among working examples 1 through 22, none of G-1 through G-4 are added in working examples 1 through 5; 2% by mass of G-1, 30% by mass in total from any 2 types of G-2, G-2', or G-3 are contained in working examples 6, 7, and 9 through 20; and 1% by mass of G-1 and 7.5% by mass of each of G-2 and G-3 (15% by mass in total) are contained in working examples 21 and 22. Looking at the deodorizing effect assessment results, it is not found that a superior deodorizing effect is constantly obtained in working examples 6, 7, and 9 through 20 where 30% by mass in total of any of G-2, G-2', or G-3 is contained, than working examples 1 through 5 where none of G-1 through G-4 is contained and working examples 21 and 22 where only 15% by mass in total of G-2 and G-3 is contained. In working examples 6, 7, and 12, the deodorizing effect is rather inferior to working examples 1 through 5, 21, and 22.

As mentioned above, according to the statements in the Description, Component (G) in terms of "surfactants other than Component (A)" is a component positioned as one that may be contained and its importance is not high. Concerning G-2, G-2', and G-3 corresponding to Component (G) specified in Invention 1, no superior deodorizing effect was obtained in working examples using these ingredients in the Deodorizing Effect Assessment compared with other working examples. Based on these facts, it is not found that there is a special technical meaning to determine Component (G) to be at least one of the types represented by General Formula (I) or (II) and to specify R^4 in General Formula (II) to be a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14 in Invention 1.

C. According to A. and B. above, it is obvious to a person ordinarily skilled in the art that a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14 is included in "C12 to C15 alkyl chain" in Exhibit Ko 1 Invention. It is not found that either a natural alcohol-derived hydrocarbon or a synthetic alcohol-derived hydrocarbon is more suitable for a laundry detergent composition than the other. The special technical meaning is not found in selecting either of them. Therefore, a person ordinarily skilled in the art could have naturally conceived of using oil and fat-derived natural alcohols having linear hydrocarbon radicals comprised of an even number of carbons (linear alcohols with the carbon number of 12 and 14), which have been used often in recent years, as raw materials of C12 to C15 alkyl chains (the carbon number from 12 to 15) of alcohol ethoxylate (AE).

D. In Exhibit Ko 1 Invention, the content of NI (7EO) is determined to be "5 to 25wt%." Specifying the content within the specified range is a matter of design variation for a person ordinarily skilled in the art.

E. Based on the above, it can be said that a person ordinarily skilled in the art could have easily conceived of, in consideration of common general technical knowledge at the time of the Application Date, using hydrocarbon derived from natural alcohols (linear alcohols with the carbon number 12 and 14) as an "C12 to C15 alkyl chain," and determining the content of non-ionic surfactants (Component (G)) to be "20 to 25% by mass" by considering it to be within the range of the content in Exhibit Ko 1 Invention, and thereby, deriving the structure related to Difference 2.

Consequently, a person ordinarily skilled in the art could have easily conceived of adopting the structure of Invention 1 related to Difference 2 based on Exhibit Ko 1 Invention and the well-known arts stated in Exhibits Ko 10, 11, 14, 36, and 37.

(2) Difference 1

In the same way as the determination related to Difference 2 above, it is also a matter of design variation for a person ordinarily skilled in the art to stipulate the content of MGDA (Trilon M) corresponding to Component (C) in Exhibit Ko 1 Invention within the specified range. Therefore, a person ordinarily skilled in the art could have easily conceived of considering the content within the range of the content, "0.1 to 5wt%," in Exhibit Ko 1 Invention and determining it to be "0.1 to 1.5% by mass" (deriving the structure related to Difference 1).

(3) Difference 3

As stated in (2) above, in Exhibit Ko 1 Invention, it is only a matter of design variation for a person ordinarily skilled in the art to consider the content of MGDA (Trilon M) corresponding to Component (C) in Exhibit Ko 1 Invention within the range of content, "0.1 to 5wt%," in Exhibit Ko 1 Invention and to determine it to be "0.1 to 1.5% by mass."

In addition, in Exhibit Ko 1 Invention, the content of Component (A) that is an anionic surfactant is also a matter that a person ordinarily skilled in the art can set as necessary within the range of "12 to 32wt%," which is the total of the content.

Determining the A/C ratio to be "10 to 100," which is within the range of "2.4 at a minimum and 320 at a maximum," as the results of setting the contents of Component (A) and Component (C) within the numerical range stated in Exhibit Ko 1 Invention (deriving the structure related to Difference 3) is also not to be construed to require special originality and ingenuity for a person ordinarily skilled in the art. Rather, this could have easily been conceived of by a person ordinarily skilled in the art.

(4) As stated in (1) through (3) above, Invention 1 could have easily been conceived of by a person ordinarily skilled in the art based on Exhibit Ko 1 Invention and the well-known arts stated in Exhibits Ko 10, 11, 14, 36, and 37, and it is reasonable to find that Invention 1 is an invention that cannot be patented pursuant to Article 29, paragraph (2) of the Patent Act.

(5) Determination on the Defendant's argument

A. As stated in No. 3, 2. [Defendant's Argument] (1) above, the Defendant argued that Difference 2 is not found to be a matter of design variation.

However, as stated in (1) B. above, according to the statements in the Description, Component (G) in terms of "surfactants other than Component (A)" is a component positioned as one that may be contained and its importance is not high. Concerning G-2, G-2', and G-3 contained in Component (G) specified in Invention 1, no superior excellent deodorizing effect was obtained in working examples using these ingredients in the Deodorizing Effect Assessment compared with other working examples. Based on these facts, it is not found that there is special technical meaning to specify Component (G) to be General Formula (I) or General Formula (II) in Invention 1. At least, it is found to be a matter of design variation for a person ordinarily skilled in the art to consider the content of the non-ionic surfactant (Component (G)) within the range of the content in Exhibit Ko 1 Invention and to determine it to be "20 to 25% by mass."

Consequently, the aforementioned Defendant's argument cannot be accepted.

B. As stated in No. 3, 2. [Defendant's Argument] (2) B. above, the Defendant argued that there are no motives to replace a non-ionic surfactant in Exhibit Ko 1 Invention with Component (G) in Invention 1.

However, NI (7EO) in Exhibit Ko 1 Invention and the compound represented by Formula (II) of Component (G) in Invention 1 share the general formula but differ only in the part of R^4 (natural alcohol-derived hydrocarbon with the carbon number of 12 and 14) (2. (2) B. above). However, it is obvious that a natural alcohol-derived hydrocarbon with the carbon number of 12 and 14 is included in "C12 to C15 alkyl chain" that is R of NI (7EO) in Exhibit Ko 1 Invention and it is not found that there is common general technical knowledge that either a natural alcohol-derived hydrocarbon or a synthetic alcohol-derived hydrocarbon is more suitable for a laundry detergent composition than the other ((1) A. and C. above). Therefore, it cannot be said that there are no motives to select natural alcohols (linear alcohols with the carbon number of 12 and 14) as a raw material of "C12 to C15 alkyl chain" in NI (7EO) in Exhibit Ko 1 Invention and it is not construed that a person ordinarily skilled in art could not have conceived of the structure related to Difference 2.

Consequently, the aforementioned Defendant's argument cannot be accepted.

C. The Defendant argues concerning Difference 1 that there are no motives to conceive of a specific detergent composition related to the Inventions by specifying the content of Component (C) in Exhibit Ko 1 Invention.

In this regard, concerning MGDA (Trilon M) that is a component corresponding to Component (C) in Exhibit Ko 1 Invention, Exhibit Ko 1 has a statement that it is one of the additives to improve the antimicrobial effect of drug products (1. (5) in Attachment 3 "Statements in Documents") and the use of additives such as MGDA increases the sterilization effect by DCPP (1. (8) in Attachment 3 "Statements in Documents").

Based on the above, a person ordinarily skilled in the art could have conceived of appropriately setting the content of Component (C) within the range in Exhibit Ko 1 Invention (0.1 to 5wt%) and determining it to be 0.1 to 1.5% by mass so that it is sufficient to increase the sterilization effect and antimicrobial effect by DCPP and to increase the odor control effect in Exhibit Ko 1 Invention. It cannot be said that there are no motives to select a percentage of Component (C) in Invention 1 from among the aforementioned numerical ranges in Exhibit Ko 1 Invention. It cannot be construed that a person ordinarily skilled in the art could not have conceived of the structure related to Difference 1.

Consequently, the aforementioned Defendant's argument cannot be accepted.

D. The Defendant argues concerning Difference 3 that Difference 3 is only a matter of design variation and that there are no motives to conceive of a specific detergent composition related to Invention 1 by adjusting the A/C ratio in Exhibit Ko 1 Invention.

However, as stated in C. above, according to the statements in Exhibit Ko 1, MGDA that corresponds to Component (C) in Exhibit Ko 1 Invention is added as an additive to increase the sterilization effect by DCPP and the range of the content is indicated. Therefore, it is a matter of design variation for a person ordinarily skilled in the art to select a numerical range within the range of the content. While an anionic surfactant that corresponds to Component (A) is added in Exhibit Ko 1 Invention, there are relevant statements as shown in 7. and 8. in Attachment 3 "Statements in Documents" respectively, in Exhibit Ko 31 (7. in Attachment 3 "Statements in Documents") and Exhibit Ko 33 (8. in Attachment 3 "Statements in Documents"). According to these statements, it is found to be common general technical knowledge at the time of the Application Date that an anionic surfactant is a laundry detergent component and has an effect of increasing the deodorizing effect by other components. Therefore, it can be said that it is a matter of design variation for a person ordinarily skilled in the art to

consider the content of the anionic surfactant in Exhibit Ko 1 Invention within the range (12 to 32wt% in total) in Exhibit Ko 1 Invention in a manner sufficient to increase its washing and other effects.

Based on the above, it cannot be said that it requires special originality and ingenuity for a person ordinarily skilled in the art to determine the A/C ratio to be "10 to 100," which is within the range of 2.4 at a minimum and 320 at a maximum (2. (4) A. above) as the result of setting the content of Component (A) and Component (C) within the numerical range of each content stated in Exhibit Ko 1 Invention and that there are no motives to determine the A/C ratio to be "10 to 100." Therefore, it cannot be construed that a person ordinarily skilled in the art could not have conceived of the structure related to Difference 3.

Consequently, the aforementioned Defendant's argument cannot be accepted.

E. As stated in No. 3, 2. [Defendant's Argument] (1) C., (2), and (3) above, the Defendant argues that the effect of Invention 1 is an outstanding effect that goes beyond the scope of the effect that a person ordinarily skilled in the art could have predicted as an effect in the case of applying the matters specifying the invention related to Differences 1 through 3 in Exhibit Ko 1 Invention, and therefore it is denied that a person ordinarily skilled in the art could have easily conceived of the effect.

Concerning the effect of Invention 1, in particular, concerning whether the degree of the effect is unpredictable, it should be examined from the perspective of whether the effect is one that a person ordinarily skilled in the art could not have predicted as an effect produced by the structure of Invention 1 at the time of the Application Date and from the perspective of whether the effect is an outstanding effect that goes beyond the scope of the effect that a person ordinarily skilled in the art could have predicted based on the relevant structure (see the judgment of the Third Petty Bench of the Supreme Court of August 27, 2019 (2018 (Gyo-Hi) 69), Saibanshu Minji No. 262, at 51).

As stated in the JPO Decision, compositions that fulfill the composition specified in Invention 1 from among compositions in working examples 1 through 22 in the Deodorizing Effect Assessment stated in the Description are those in working examples 6, 7, 9 through 14, and 20 (the written JPO Description, page 51). The results of the Deodorizing Effect Assessment for these working examples are "2.3/○" for working example 9, "1.4/◎" for working example 10, and "1.2/◎" for working example 11. Assessment values for other working examples are 2.6 through 3.4 and all their judgments are "△." According to the assessment and judgment standard in the Deodorizing Effect Assessment (1. (4) above), it is found that a certain deodorizing

effect is obtained in those corresponding to working examples in Invention 1. However, it cannot be said that the effect is obviously excellent, excluding working examples 9 through 11. Assessment values of working examples that do not correspond to the working examples in Invention 1 are 2.8 through 3.4. Therefore, it is not found that the assessment of working examples that correspond to those in Invention 1 is higher (superior in deodorizing effect) than those that do not correspond.

From among working examples 9 through 11, Component (D) (protease) is added in working example 9, Component (E) (zinc sulfate monohydrate) is added in working example 10, and Component (D) and Component (E) are added in working example 11 respectively. It is considered that the deodorizing effect obtained in these working examples is superior to that in other working examples due to the addition of these components.

Based on the above, it cannot be found that the effect of Invention 1 is one that a person ordinarily skilled in the art could not have predicted as an effect produced by the structure of Invention 1 based on the deodorizing effect assessment results of working examples that are compositions fulfilling the composition specified in Invention 1, or that the effect is an outstanding effect that goes beyond the scope of the effect that a person ordinarily skilled in the art could have predicted based on the relevant structure.

In other words, it cannot be found that the effect of Invention 1 is an outstanding effect that goes beyond the scope of the effect that a person ordinarily skilled in the art could have predicted to be the effect shown in the case of applying the matters specifying the invention related to Differences 1 through 3 in Exhibit Ko 1 Invention.

Consequently, the aforementioned Defendant's argument cannot be accepted.

(6) A. Based on the above, it is found that the determination of the JPO Decision on an inventive step of Invention 1 against Exhibit Ko 1 Invention contains an error and Invention 1 is an invention that cannot be patented pursuant to Article 29, paragraph (2) of the Patent Act.

B. The JPO Decision determined that, in the same way as Invention 1, Inventions 3 through 5 are not inventions that cannot be patented pursuant to Article 29, paragraph (2) of the Patent Act on the assumption that these inventions cited Invention 1 directly or indirectly and the matters specifying the inventions are further added to them. However, as stated in A. above, the determination of the JPO Decision on an inventive step of Invention 1 contains an error, and therefore, the aforementioned determination related to Inventions 3 through 5 also contains an error.

C. Consequently, Grounds for Rescission 2 are well-grounded.

4. Grounds for Rescission 3 (Error in the determination on the existence of violation of the support requirement of the Inventions)

(1) It is construed that whether a statement in the claims conforms to the support requirement should be determined by comparing the statement in the claims and the statement in the detailed explanation of the invention and by examining whether an invention stated in the claims is an invention stated in the detailed explanation of the invention and the invention is in the scope where a person ordinarily skilled in the art can recognize that the problems of the invention can be solved based on the statement in the detailed explanation of the invention and whether it is in the scope where a person ordinarily skilled in the art can recognize that the problems of the invention can be solved in light of common general technical knowledge at the time of filing of the application even without any statement or suggestion in the detailed explanation of the invention.

(2) As stated in 1. (3) C. above, the problem of the Inventions is to provide a laundry detergent composition having an excellent deodorizing effect even under an environment where clothes are wet and bacteria can easily grow.

(3) The Description presents that it is found that the aforementioned problem of the Inventions can be solved by combining specific anionic surfactants, phenol-type antimicrobial agents, and aminocarboxylic acid-type chelating agents (paragraph [0005]).

In the Deodorizing Effect Assessment stated in the Description, compositions fulfilling the composition specified in Invention 1 are also used as part of the working examples. The method of the Deodorizing Effect Assessment is as stated in 1. (4) above, which is found to be under testing conditions in an environment where clothes are wet and bacteria can easily grow. The deodorizing effect assessment result for compositions fulfilling the composition specified in Invention 1 is as stated in 3. (5) E. above. It is found that a certain deodorizing effect is obtained, including from compositions in which Component (D) or Component (E) are not included.

Therefore, in light of the statements in the detailed explanation of the invention in the Description, it can be said that Invention 1 is in the scope where a person ordinarily skilled in the art can recognize that the problem stated in (2) above can be solved and that it is stated in the detailed explanation of the invention.

In addition, Inventions 3 through 5 cited Invention 1 directly or indirectly and the matters specifying the inventions are further added to them. Therefore, in the same way as Invention1, they are in the scope where a person ordinarily skilled in the art can recognize that the problem of the inventions stated in (2) above can be solved.

(4) Determination on the Plaintiff's argument

A. As stated in No. 3, 3. [Plaintiff's Argument] (1) above, the Plaintiff argues that a person ordinarily skilled in the art could not have recognized that the problem of the Inventions can be solved.

However, even if the deodorizing effect of compositions corresponding to the working examples in Invention 1 is in the degree of "3 points: Unusual odor can be sensed as slightly strong," it is found that a certain deodorizing effect is obtained based on the result of the Deodorizing Effect Assessment. A further superior deodorizing effect is obtained in working examples 10 and 11 where Component (E) is added compared with other working examples (3. (5) E. above). It can be said that a certain deodorizing effect is obtained in working examples in Invention 1 where Component (E) is not included.

Based on the above, it cannot be said that the effect of the Inventions is unpredictable and outstanding (3. (5), E. above). However, looking at the existence of violation of the support requirement, in light of the statements in the detailed explanation of the invention in the Description, it can be said that Invention 1 is in the scope where a person ordinarily skilled in the art can fully recognize that the problem stated in (2) above can be solved and that it is stated in the detailed explanation of the invention.

Consequently, the aforementioned Plaintiff's argument cannot be accepted.

B. As stated in No. 3, 3. [Plaintiff's Argument] (2) above, the Plaintiff argues that it is not found according to the Description that cases of using ingredients other than methyl glycine diacetic acid (MGDA) as Component (C) in Invention 1 are supported.

In this regard, in the Deodorizing Effect Assessment, C-1: methyl glycine diacetic acid is used as Component (C) in all working examples of the composition that fulfill the composition specified in Invention 1 (working examples 6, 7, 9 through 14, and 20).

However, Component (C) is an aminocarboxylic acid-type chelating agent (paragraph [0019] in the Description), and methyl glycine diacetic acid (MGDA) is considered to be particularly preferable among compounds represented by Formula (c1) (paragraphs [0022]). However, there is a statement that other components where A, M, and n are other than methyl glycine diacetic acid in Formula (c1) may also be used (paragraphs [0021] and [0022]).

In addition, in Exhibit Ko 13 (9. in Attachment 3 "Statements in Documents"), there is a statement as stated in 9. in Attachment 3 "Statements in Documents." According to the statement, it is construed that a compound represented by Formula (c1) is widely used preferably as a chelating agent in detergent compositions. In Exhibit Ko 17 (10.

in Attachment 3 "Statements in Documents") and Exhibit Ko 18 (11. in Attachment 3 "Statements in Documents"), there are statements as stated in 10. and 11. in Attachment 3 "Statements in Documents" respectively. Based on these statements, the same understanding as above can be obtained.

Consequently, it is found to have been common general technical knowledge at the time of the Application Date that the compound represented by Formula (c1) shows function and effect as a chelating agent not only in cases where A, M, and n are numerical values when using methyl glycine diacetic acid.

In addition, it is not found that if a compound represented by Formula (c1) is slightly different from methyl glycine diacetic acid, the deodorizing effect is also different or that if the number of n in Formula (c1) increases, the deodorizing effect is not obtained, based on the fact that the deodorizing effect in comparative examples using Component (C-3) (trisodium citrate) in the Deodorizing Effect Assessment is inferior to the effect in individual working examples.

Based on the above, in light of the detailed explanation of the invention in the Description and common general technical knowledge at the time of the Application Date, it is found that a person ordinarily skilled in the art who comes across the Description can recognize that Invention 1 can solve the problem stated in (2) above even if a component other than methyl glycine diacetic acid is used as Component (C) in Invention 1.

Consequently, the aforementioned Plaintiff's argument cannot be accepted.

C. As stated in No. 3, 3. [Plaintiff's Argument] (3) above, the Plaintiff argues that it is not found that Component (G) in Invention 1 is not supported even in cases where G-1 (coconut fatty acid) is not included.

However, in Exhibit Ko 19 (12. in Attachment 3 "Statements in Documents") and Exhibit Ko 20 (13. in Attachment 3 "Statements in Documents"), there are statements as stated in 12. and 13. in Attachment 3 "Statements in Documents." According to these statements, it is found to be common general technical knowledge at the time of the Application Date that small amounts of coconut fatty acid or other fatty acid are added to laundry detergents as foam control agents to increase the foam controlling property and rinsing property.

Based on the above, it is found that a person ordinarily skilled in the art who comes across the Description can understand based on the aforementioned common general technical knowledge that coconut fatty acid is not a necessary ingredient to solve the problem of Invention 1 even if all working examples of compositions that fulfill the composition specified in Invention 1 include G-1 (coconut fatty acid) in the

Deodorizing Effect Assessment.

Exhibit Ko 12 pointed out by the Plaintiff is found to be a statement in a blog on the internet for which the author is not clear. Therefore, it cannot be found that the content of that statement was common general technical knowledge at the time of the Application Date.

Consequently, the aforementioned Plaintiff's argument cannot be accepted.

(5) Based on the above, Grounds for Rescission 3 are groundless.

5. Conclusion

As stated above, Grounds for Rescission 1 and 3 are groundless, but Grounds for Rescission 2 are well-grounded. Accordingly, the part related to Claim 1 and Claims 3 through 5 of Patent No. 6718777 from among the JPO Decision should be rescinded and the Plaintiff's request should be approved.

Consequently, the judgment shall be rendered as indicated in the main text.

Intellectual Property High Court, Third Division

Presiding judge: SHOJI Tamotsu

Judge: IMAI Hiroaki

Judge: MIZUNO Masanori

(Attachment 1 "Written Trial Decision (copy)" and Attachment 2 "Patent Gazette (copy)": omitted)

Attachment 3

Statements in Documents

1. Exhibit Ko 1 (IP.com, "Biocidal Compositions containing 4,4'-dichloro 2-hydroxy diphenyl ether (DCPP)," The IP.com Journal, IPCOM000213522D, December 20, 2011)

(1) "Biocidal Compositions containing 4,4'-dichloro 2-hydroxy diphenyl ether (DCPP)

Antimicrobial compound, 4,4'-dichloro-2-hydroxydiphenyl ether (DCPP) can be formulated into cleaning and disinfecting products. These can be cleaning products for hard surfaces, laundry detergents, fabric conditioners, hand dishwashing products, products for disinfection and sanitization of hard surfaces, all-purpose cleaners, floor cleaners, glass cleaners, kitchen cleaners, bath cleaners, sanitary cleaners, hygiene rinse products for fabrics, carpet cleaners, furniture cleaners, but also products for conditioning, sealing, caring for or treating hard and soft surfaces.

Those cleaning and disinfecting products can be solids, powders, granules, cakes, bars, tablets, liquids, pastes or gels. They can be ready to use products or can be concentrates that are diluted before or during the cleaning, washing, treating or conditioning process.

Among the purposes of these cleaning and disinfecting products containing DCPP are the killing, control and/or inhibition of growth of microorganisms, like bacteria, fungi, yeasts, viruses and algae on the hard and soft surfaces that are treated with the product. DCPP can also have a benefit in the sense that it manipulates the metabolism of the aforementioned microorganisms on these surfaces, which may result in reduced odors. The biocidal or antimicrobial effect can be a quick effect which takes place when treated articles and/or surfaces are in direct contact with the cleaning/disinfecting formulation or dilutions thereof and finishes within the treatment period. However, the antimicrobial effect can also be a longer lasting effect, which continues to take place on the treated surfaces, after application. Below we will use the phrase, "antimicrobial effect," to refer to all these effects mentioned in this paragraph. (page 1, lines 1 to 25; "Abridged translation of Exhibit Ko 1," pages 1 and 2)

(2) " In those mentioned cleaning and disinfecting products, DCPP can be combined with further chemicals, products, mixtures and/or polymers (see c-f below) in order to strengthen, improve, prolong, restore, boost, support, accelerate or broaden its own antimicrobial effect or to stabilize the DCPP active molecule in the product. Stabilization of the DCPP active molecule means, for example, the inhibition of chemical degradation of DCPP itself in the cleaning product, the inhibition of discoloration of the product containing DCPP or the inhibition of unpleasant smell of the cleaning product with DCPP.

What are disclosed are cleaning and disinfecting product formulations of the first paragraph comprising:
(a) 0.01-10% DCPP;
(b) 0-80%, for example 0.5-20%, of one or more surfactant(s);
(c) 0-50%, for example 0.1-10%, of one or more hydrotropic agent(s);
(d) 0-50%, for example 0.01-20%, of one or more further biocidal active chemical(s), in addition to DCPP;
(e) 0-50%, for example 0.1-20%, of one or more further additive(s) that may improve the antimicrobial effect of the cleaning or disinfecting product;
(f) 0-10%, for example 0.001-5%, of one or more agent(s) that can stabilize the active DCPP in the formulation.

Below are given examples for the components (b) to (f)." (page 3, lines 10 to 29; "Abridged translation of Exhibit Ko 1," pages 2 and 3)

(3) "(b) Surfactants

Surfactants (b) will normally be comprised of at least one surfactant which may be anionic, cationic, nonionic or amphoteric.

The anionic surfactant can be, for example, a sulfate, sulfonate or carboxylate surfactant or a mixture thereof. Often used are alkylbenzenesulfonates, alkyl sulfates, alkyl ether sulfates, olefin sulfonates, fatty acid salts, alkyl and alkenyl ether carboxylates or an α-sulfonic fatty acid salt or an ester thereof.

Often used sulfonates are, for example, alkylbenzenesulfonates having from 10 to 20 carbon atoms in the alkyl radical, alkyl sulfates having from 8 to 18 carbon atoms in the alkyl radical, alkyl ether sulfates having from 8 to 18 carbon atoms in the alkyl radical, and fatty acid salts derived from palm oil or tallow and having the following.

The number of carbon atoms in the alkyl moiety is from 8 to 18. The average molar number of ethylene oxide units added to the alkyl ether sulfates is from 1 to 20, preferably from 1 to 10. The cation in the anionic surfactants is preferably an alkaline metal cation, especially sodium or potassium, more preferably sodium. Preferred carboxylates are alkali metal sarcosinates represented by formula R_{19}'-$CON(R_{20}')CH_2COOM_1$, wherein R_{19}' is C_9-C_{17}alkyl or C_9-C_{17}alkenyl, R_{20}' is C_1-C_4alkyl and M_1 is an alkali metal, especially sodium.

The non-ionic surfactant may be, for example, a primary or secondary alcohol ethoxylate, especially C_8-C_{20} aliphatic alcohol ethoxylated with an average of from 1 to 20 mol of ethylene oxide per alcohol radical. Preference is given to primary and secondary C_{10}-C_{15} aliphatic alcohol ethoxylated with an average of from 1 to 10 mol of ethylene oxide per alcohol radical. Non-ethoxylated non-ionic surfactants, for example

alkylpolyglycosides, glycerol monoethers and polyhydroxyamides (glucamides), may likewise be used.

In addition to anionic and/or non-ionic surfactants, the composition may contain cationic surfactants. Possible cationic surfactants include all common cationic surface-active compounds, especially surfactants having a textile softening effect." (page 3, lines 30 to page 4, line 17; "Abridged translation of Exhibit Ko 1," pages 4 and 5)

(4) "(d) Further biocidal active molecules

... silver compounds, such as JM ActiCare, or organic silver complexes, such as for example silver citrate (Tinosan SDC®), or anorganic silver complexes, such as silver zeolites and silver glass compounds (e.g. Irgaguard B500, Irgaguard B6000, Irgaguard B7000) and others described in (WO-A-99/1879, EP1041879B1); anorganic or organic complexes of metal, such as Cu, Zn, Sn, Au, etc.; ..." (page 5, line 26, page 7, lines 34 to 39; "Abridged translation of Exhibit Ko 1," page 5)

(5) "(e) Further additives, improving the antimicrobial effect of the formulation

... Other additives (e) are comprised of metal chelating and complexing agents, for example, EDTA, NTA, alaninediacetic acid or phosphonic acid, ethylene di-amine tetra acetic acid (EDTA), beta-alanine diacetic acid (EDETA), phosphonomethyl chitosan, carboxymethyl chitosan, hydroxyethylene di-amino tetraacetic acid, nitrilotriacetic acid (NTA) and ethylenediamine disuccinic acid (S,S-EDDS, R,REDDS or S,R-EDDS), tripolyphosphates, polycarboxylates, polycarboxylic acids, organic phosphonates, aminoalkylenepoly(alkylenephosphonates), amino acid acetates like MGDA (Trilon® M, BASF), and Dissolvine® GL (AKZO), as well as asparaginic acid derivatives, such as Baypure® CX (Lanxess)." (page 7, line 41, page 8, lines 3 to 12; "Abridged translation of Exhibit Ko 1," page 6)

(6) "Formulation examples

The following biocidal product compositions (I-LXII) are disclosed. Below, for each of the formulation (I-XXV), the composition, the manufacturing information, technical information, and antimicrobial or biocidal efficacy of the numbered formulation are given. In Formulations (I-XXV), Tinosan® HP100 is a mixture of 30% DCPP and 70% 1,2-propylene glycol." (page 9, lines 10 to 15; "Abridged translation of Exhibit Ko 1," pages 6 and 7)

(7) "Antimicrobial liquid laundry detergent formulations XLIX to LII (numbers are wt% in the formulation.)

Formulation	**XLIX**	**L**	**LI**	**LII**

NaLAS	8-17	8-17	8-17	8-17
NI (7EO)	5-25	5-25	5-25	5-25
SLES (3EO)	4-15	4-15	4-15	4-15
Soap	0.5-7	0.5-7	0.5-7	0.5-7
Citric acid	0.1-3	0.1-3	0.1-3	0.1-3
Glycerol	1-8	1-8	1-8	1-8
Propylene glycol	0.5-8	0.5-8	0.5-8	0.5-8
Sodium chloride	0-4	0-4	0-4	0-4
Triethanolamine	0.5-5	0.5-5	0.5-5	0.5-5
Perfume	0.01-1	0.01-1	0.01-1	0.01-1
Protease	0.001-0.01	0.001-0.01	0.001-0.01	0.001-0.01
Amylase	0.001-0.01	0.001-0.01	0.001-0.01	0.001-0.01
Lipase	0.001-0.01	0.001-0.01	0.001-0.01	0.001-0.01
Fluorescent whitening agent	0.02-0.5	0.02-0.5	0.02-0.5	0.02-0.5
DCPP	0.01-0.5	0.01-0.5	0.01-0.5	0.01-0.5
Cumenesulfonic acid sodium salt	0	0.5-10	0	0
MGDA (Trilon® M)	0	0	0.1-5	0
Phenoxyethanol	0	0	0	1-10
Water/impurities/minors	Remainder	Remainder	Remainder	Remainder

For these formulations, enzymes are given as percent pure enzyme. NI (7EO) refers to R-(OCH_2CH_2)nOH. Where R is an alkyl chain of C12 to C15, and n=7. NaLAS is a linear alkyl benzenesulfonate (LAS) and SLES(3EO) is C_{12}-C_{18} alkyl polyethoxylated (3.0) sulphate, SDS is sodium dodecyl sulphate.

These liquid detergent formulations XLIX to LII show a very good long lasting antimicrobial effect on the treated textiles (cotton, polyester, nylon, wool, etc.) as assessed according to the AATCC 100-2004 method on for example K. pneamonieae, S.aureus, Salmonella Choleraesuis and E. coli (page 36, line 1 to the last line; "Abridged translation of Exhibit Ko 1," pages 7 and 8)

(8) "Boosting effects of additives

... (XXXIV) An antimicrobial and bactericidal mixture containing 0.025% DCPP, 35% 1,2-propylene glycol, 3.13% MGDA (Trilon® M, 40% active, BASF, used as delivered), water up to 100% and citric acid until pH=8.0

Formulations XXXIII and XXXIV were all tested at 80% concentration in an EN 1276 bactericidal test (clean conditions (0.03% Albumine), 5 min contact time, room temperature, Pseudomonas aeruginosa ATCC15442). Formulation XXXIII showed a LOG reduction of 2 log; Formulation XXXIV showed a log reduction of over 5 log. Hence the use of additives like MGDA boosts the bactericidal effect of DCPP." (page 31, line 7 from the bottom, line 3 from the bottom to page 32, line 6; "Abridged translation of Exhibit Ko 1 (additional part)"

2. Exhibit Ko 10 (Masaru Oya, "Surfactant [7]: AE (alcohol ethoxylate)," September 24, 2006

"Alcohol ethoxylate (AE) is non-ionic surface-active agent that is heavily used along with LAS.

(1) Chemical structure of AE

AE is generally represented by the chemical formula, R-O-(CH_2CH_2O)n-H. This is a type called primary AE. This surfactant is manufactured in very many kinds depending on the alkyl radical chain length and added number of moles of ethylene oxide (CH_2CH_2O).

Ingredients that are contained in general detergents are mainly alkyl radical having C12 to C15. The importance of those with an average value of added number of moles of ethylene oxide of approximately 3 to 10 is high in terms of commercial use in Europe. Concerning ecological impact assessment, toxicity is assessed by standardizing them to carbon number 13.3 of alkyl radical and the added number of moles 8.2 of ethylene oxide. In Japan, AE with the carbon number of 12 to 15 is designated as a Class I Designated Chemical Substance under the PRTR Act.

Oil and fat-derived higher alcohols and petroleum-derived higher alcohols are used as raw materials. Oil and fat-derived higher alcohols are obtained by hydrolysis of oil and fat and then, by hydrogen reduction of fatty acids or fatty acid esters under high pressure and high temperature. Alkyl radical is a linear type and hydroxy radical is connected to the end of the alkyl radical. Natural source-derived higher alcohols are characterized by containing unsaturated oleyl alcohol and by the fact that most carbon numbers are even numbers. This is because most carbon numbers of natural source-derived fatty acids are even numbers.

Petroleum-derived higher alcohols are divided into three groups by manufacturing methods, Ziegler alcohols, oxo alcohols, and secondary alcohols. Ziegler alcohol has the same structure as natural source-derived higher alcohol, being a linear type and having a hydroxy radical at the end. Oxo alcohol has a structure where there are branches of methyl radical (-CH_3) in the middle of the carbon chain. The secondary

alcohol refers to a type where part of -O-(CH_2CH_2O)n-H is connected in the middle of the alkyl radical and forms one branch.

In the past, petroleum-derived higher alcohols were considerably less expensive than oil and fat-derived higher alcohols. However, recently, the difference in price has become minimal and natural oil and fat-derived higher alcohols are often used." (page 1, left column, line 1 to right column, line 11)

3. Exhibit Ko 11 (FY2006 NEDO Outcome Report Materials - Alcohol Ethoxylate Detailed Risk Assessment Report -, April 27, 2007, Abstract, pages 0 to 3)

(1) "This article is a summary of the outcomes of detailed risk assessment on alcohol ethoxylate (hereinafter referred to as 'AE'; also known as 'polyoxyethylene alkyl ether')." (Abstract - page 1, lines 5 to 6)

(2) "2. Information on Production and Distribution

Production amount of AE has tended to increase since 2002. Production amount of AE in 2003 (including the portions of those used as derivative raw materials for other substances) was approximately 170,000 t and it accounted for slightly more than 30% of non-ionic surfactants. In addition, the distribution amount of congener group of C12 to C15 in the scope specified by the PRTR Act accounted for 60 to 80 % of the total AE distribution amount." (Abstract - page 3, lines 8 to 11)

(3) "4. AE congener compositions contained in commercially available detergents in Japan

As a result of commissioned research of AE congener compositions conducted for this detailed risk assessment, AE congener composition was different in each detergent product. In addition, it is found that many congener groups in the range of C12 to 15, EO 0 to 15 were formulated into detergent products that were highly used in general households and most of them had an even number of C chains." (Abstract - page 3, lines 20 to 23)

4. Exhibit Ko 14 (written and edited by Akio Kato, "Use of Palm Oil and Palm Kernel Oil," first version, first printing, July 31, 1990, Kabushikikaisha Saiwai Shobo, pages 212 to 215)

"Fatty acids or alcohols that comprise natural oils and fats are characterized by having linear saturated or unsaturated hydrocarbon radicals comprised of an even number of carbons. Therefore, natural higher alcohols that are obtained by using them as raw materials also have an even number of carbon chains. In the case of synthetic alcohols, if the Ziegler method that uses ethylene as raw materials is used, linear and saturated higher alcohols having the same even number of carbon chains as natural alcohols can be obtained. However, if other methods are used, only higher alcohols

containing odd or branched alkyl radicals can be obtained." (page 212, lines 11 to 17)

5. Exhibit Ko 36 (Unexamined Patent Application Publication No. 1989-174599)

"Component B: 10 to 15wt% of a linear primary C_{12}-C_{15} alcohol having 2 to 4 ethylene glycol ether radials or corresponding alcohols having methyl branching at the 2nd position;

Component C: 4 to 8wt% of a linear saturated primary C_{12}-C_{15} alcohol having 6 to 8 ethylene glycol ether radials or corresponding alcohols having methyl branching at the 2nd position;" (page 702, upper right, lines 9 to 16)

"Component B has 12-15 carbon atoms in the alcohol radical and can be derived from natural or synthetic alcohols (oxo alcohols)." (page 702, lower right, lines 3 to 5)

"Component C is preferably derived from the same alcohol or alcohol mixture as Component B and has 6.5 to 7.5 glycol ether radicals on average." (page 702, lower right, lines 11 to 13)

6. Exhibit Ko 37 (Masayuki Hashimoto, "Approach to Pursuing Environmental-consciousness and Ideal Materials to Pursue New Functions of Surfactants," DKS Co. Ltd. Company Report, No. 551, Winter in 2010)

"Main products of environment-conscious alcohol ethoxylate (AE) are those obtained by additional polymerization of ethylene oxide (EO) with natural or oxo method-derived (mainly mixture of 2-methyl branch and a linear structure) higher alcohols with the carbon number from 12 to 15." (page 11, left column, lines 6 to 10)

7. Exhibit Ko 31 ("Detergent and Cleaning Encyclopedia (New Format)," Asakura Publishing Co., Ltd., March 10, 2011, second printing)

"Anion surfactants are the most used surfactants, such as in detergents for clothing and body." (page 70, lines 5 to 6)

8. Exhibit Ko 33 (Unexamined Patent Application Publication No. 2013-136682)

"[0016]

<Component (A)>

Component (A) is an anionic surfactant. By containing Component (A), it is possible to satisfactorily remove stains and odorous components attached to an object to be cleaned and to improve the deodorizing effect. It is considered that this is because, in a cleaning liquid in which the detergent for textile products is dispersed in cleaning water, Component (A) takes in a complex formed by Component (B) and Component (C) and forms an aggregate with Component (D), and the aggregate is adsorbed to a textile product, thereby exhibiting a deodorizing effect."9. Exhibit Ko 13 (Japanese Translation of PCT International Application Publication No. 2012-515827)

"[Technical field]

[0001]

The present invention relates to alkaline-earth metal salts of chelating agents, compositions comprising the same, and methods and uses relating thereto. The invention specifically relates to such salts, compositions, methods, and uses that provide good oxidative stability.

[0002]

The present invention particularly relates to heavy metal and transition metal chelating agents, particularly for use in bleaching applications.

[Background art]

[0003]

Active oxygen-based bleaching compositions comprising compounds such as peroxides and peracids are commonly used in a wide variety of applications, for example in laundry, dishwashing and other cleaning compositions; in the bleaching of pulp and paper; and in personal care compositions."

"[0026]

Preferably, the chelating agent is selected from groups consisting of methyl glycine diacetic acid (MGDA), glutamic acid, N, N-diacetic acid (GLDA, glutamic acid, N,N-diacetic acid), ...

[0028]

It is appropriate for the acidic chelating agent to be selected from MGDA, GLDA, ...

[0029]

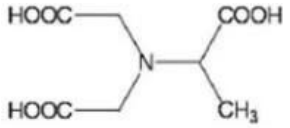
Preferably, the acidic chelating agent is selected from MGDA, GLDA, ...

[0030]

Methyl glycine diacetic acid (MGDA) has the structure shown in Formula I:

[0031]

[Chemical Formula 1]



Formula I

[0032]

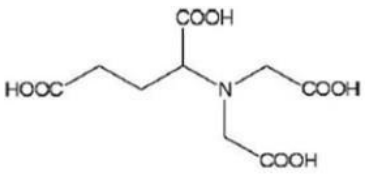
MGDA may be present as either an enantiomer or as a mixture thereof. Preferably it is present as a racemic mixture.

[0033]

Glutamic N, N-diacetic acid (GLDA) has the structure shown in Formula II:

[0034]

[Chemical Formula 2]



Formula II

10. Exhibit Ko 17 (Japanese Translation of PCT International Application Publication No. 2017-536306)

"[0009]

The present invention provides a water-soluble cleaning pouch, i.e., a pouch containing a cleaning composition. The pouch may have a single compartment or multiple compartments. At least one compartment comprises a liquid composition, and the liquid composition comprises an aminocarboxylic acid complexing agent. The complexing agent is preferably selected from methyl glycine diacetic acid (MGDA), glutamic acid diacetic acid (GLDA), salts thereof and mixtures thereof. ..."

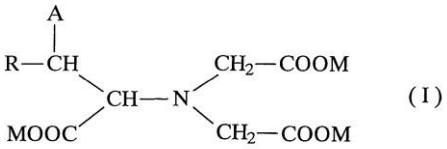
11. Exhibit Ko 18 (Patent No. 3889250)

"[0020]

Examples of Component (a1) include compounds having 2 to 5, preferably 3 to 5 COOM radicals (M represents H, Na, K, NH_4) in a molecule. Among them, a compound represented by the following formula (I) is preferred in view of cleaning performance and environmental suitability.

[0021]

[Chemical Formula 1]



(I)

[0022]

[In the formula, R represents -(CH_2)n-A, A represents H, OH, COOM, M represents H, Na, K, NH_4, preferably Na, and n represents a number from 0 to 5.]"

12. Exhibit Ko 19 (Unexamined Patent Application Publication No. 1986-288000)

"The fatty acid having 8 to 20 carbon atoms, which is Component (c) in the present invention, may be either a saturated fatty acid or an unsaturated fatty acid, and is blended in an amount from 0.5% to 3%. Coconut acid containing lauric acid as a main component, tallow fatty acid containing oleic acid as a main component, and palm fatty

acid are preferable as such fatty acids.

The effect on rinsing is not seen if fatty acids are less than 0.5%. If they exceed 3%, the effect contributing to rinsing no longer changes, on the other hand, it worsens the forming property during laundry. Therefore, it is not preferable." (page 744, upper left, line 12 to upper right, line 2)

"The liquid detergent composition has characteristics that... by further blending specific amounts of an anionic surfactant, a nonionic surfactant, and a fatty acid, not only detergency but also rich foaming equal to that of a powder detergent is exhibited during washing, and the foam is rapidly eliminated during rinsing." (page 745, lower left, lines 5 to 14)

13. Exhibit Ko 20 (JPO Gazette 1998-25 [7159] Collection of Well-known Prior Arts (Laundry powder detergent), JPO, March 26, 1998)

"3.1.1.7 Higher Fatty Acid Salt (Soap)

(omitted)

[Materials]

- Fatty acids
- Natural oils and fats (coconut oil, beef tallow, soybean oil, palm oil, palm kernel oil, cotton seed oil, lard, etc.)
- Natural oil and fat-derived fatty acids and methyl esters

(omitted)

[Physical property / property / characteristics]

(omitted)

- Mixed as a foam controlling agent (rinsing and low forming property)

[Composition amount]

Powder detergent with a soap as its main base was often seen in the past; however, since the use amount increases due to high cmc and it is inferior in solubility at low temperatures and stability in hard water, its main intended use is to be added secondarily as a foam controlling agent. For this purpose, it is added at 10% at a maximum. (pages 13 and 14)