

Appeal Decision

Appeal No. 2019-7539

Appellant Japan Photocatalyst Center Corporation

Patent Attorney YAMAUCHI, Hiroaki

Appellant Toso Sangyo co., ltd.

Patent Attorney YAMAUCHI, Hiroaki

The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2014-40959, entitled "PHOTOCATALYST COATING LIQUID AND PHOTOCATALYST FILM USING THE SAME" (the application published on March 2, 2017, Japanese Unexamined Patent Application Publication No. 2017-42683) has resulted in the following appeal decision:

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the Procedures

The present application was filed on March 3, 2014.

In response to the notice of reasons for refusal dated April 5, 2018, a written opinion and a written amendment were submitted on June 4, 2018.

In response to a notice of reasons for refusal dated August 9, 2018, a written opinion was submitted on October 5, 2018, together with a written amendment.

In response to an examiner's decision of refusal dated March 5, 2019, an appeal of the case was made on June 6, 2019 and at the same time, a written amendment was submitted on the same day.

In response to a notice of reasons for refusal by the panel dated June 23, 2020, a written opinion was submitted on August 31, 2020, together with a written amendment.

No. 2 The Invention

The present application is entitled "Photocatalyst Coating Liquid and

Photocatalyst Film Using the Same" and the matters recited in Claims 1 to 5 of the Scope of Claims amended by the written amendment dated August 31, 2020 (hereinafter, referred to as "the fourth amendment") are as follows:

"[Claim 1]

A photocatalyst coating liquid comprising:

a photocatalyst-containing material including nano-order sized photocatalyst particles, the photocatalyst-containing material having neutral pH and being negatively charged;

a negatively charged substance having a peak zeta potential of -30 mV to -70 mV and containing dispersed silica particles with an average secondary particle size of 5 nm or more and 18 nm or less, the negatively charged substance and the photocatalyst particles repelling each other in water containing the photocatalyst particles; and

a solvent-based or water-based resin, wherein

the negatively charged substance has a pH of 7 or more and 9 or less and is contained in a proportion of 40 wt% or more and 60 wt% or less with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film, and

the photocatalyst film has a total light transmittance of 86% or more.

[Claim 2]

The photocatalyst coating liquid according to Claim 1, wherein

the photocatalyst-containing material is contained in a proportion of from 3 wt% to 70 wt% with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film; and

the resin is contained in a proportion of 3 wt% to 60 wt% with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film.

[Claim 3]

The photocatalyst coating liquid according to Claim 1, wherein

the resin includes any one of an acrylic resin, a silicon resin, a silicone resin, and a urethane resin.

[Claim 4]

The photocatalyst coating liquid according to Claim 1, wherein

the photocatalyst particles are those in which flat crystal particles and three-dimensional crystal particles that are thicker than the flat crystal particles are combined.

[Claim 5]

A photocatalyst film produced by curing the photocatalyst coating liquid

according to Claim 1."

No. 3 Outline of the notice of reasons for refusal dated June 23, 2020

The outline of the reasons for refusal stated in the notice of reasons for refusal dated June 23, 2020 by the panel (hereinafter referred to as "the previous notice of reasons for refusal") consists of the following Reasons 1 to 4.

Reason 1: The written amendments respectively submitted on June 4, 2018, October 5, 2018, and June 6, 2019 was not made within the scope of the matters described in the Description, the Scope of Claims, or Drawings originally attached in the application, and thus do not satisfy the requirements under Article 17-2(3) of the Patent Act.

1. (1) The matter in which the negatively charged substance has a zeta potential of -30 mV to -70 mV

1. (2) The matter in which an average secondary particle size is within the range of 5 nm or more and 18 nm or less

Reason 2: The present application does not comply with the requirements stipulated in Article 36(4)(i) of the Patent Act due to deficiencies in the description of the Detailed Description of the Invention in the following points.

3. The matter in which "specific embodiments of the invention cannot be correctly understood"

Reason 3: The present application does not comply with the requirements stipulated in Article 36(6)(i) of the Patent Act due to deficiencies in the recitation the Scope of Claims in the following points.

4. (3) The matter in which Comparative Example 1 is considered to correspond to the present invention, but is merely a comparative example (one that cannot solve the problem)

4. (4) The matter in which the numerical ranges of Zeta potential and pH are too wide

4. (5) The ranges of the amounts of blending of negatively charged substance, photocatalyst particles, and resin are too wide

4. (6) The type of uncured resin is not specified

Reason 4: The present application does not comply with the requirements stipulated in Article 36(6)(ii) of the Patent Act due to deficiencies in the Scope of Claims in the following matters:

2. (1) What is meant by the wording "negatively charged substance"

2. (2) What is meant by the wording "present in large numbers"

2. (3) What is meant by the concentration of the "negatively charged substance"
2. (4) What are meant by the concentrations of the "photocatalyst particles" and the "resin"

No. 4 Judgment by the body

1. Regarding Reason 1 (new matter)

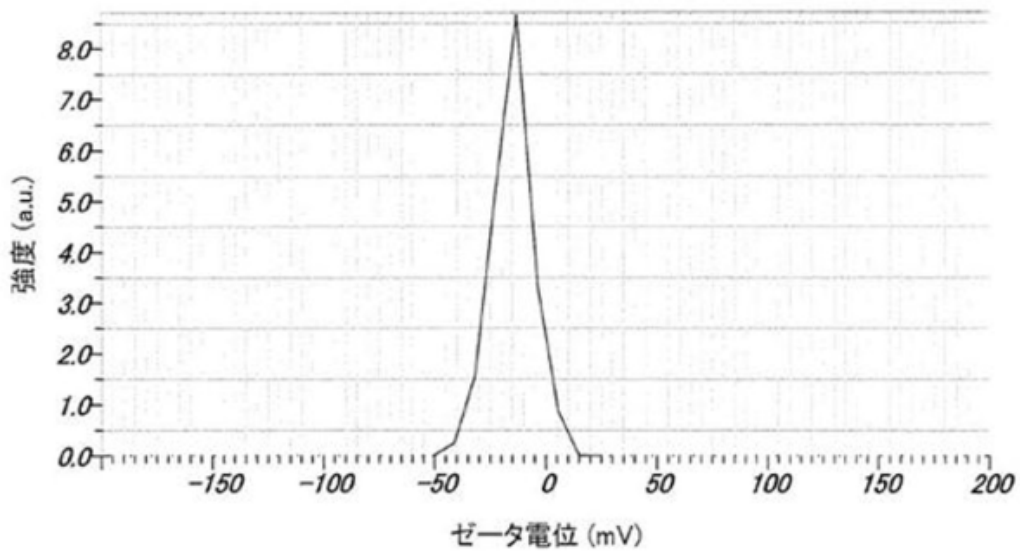
(1) Regarding the matter in which the negatively charged substance has a zeta potential of -30 mV to -70 mV

Each of the written amendment dated June 4, 2018 (hereinafter, referred to as "the first amendment"), the written amendment dated October 5, 2018 (hereinafter, referred to as "the second amendment"), and the written amendment dated June 6, 2019 (hereinafter, referred to as "the third amendment") includes an amendment to change the recitation "the negatively charged substance has a zeta potential of -30 mV to 70 mV" in Claim 1 for the Description, the Scope of Claims, or Drawings originally attached to the application (hereinafter, referred to as "the originally attached description, etc.") to "the negatively charged substance has a zeta potential of -30 mV to -70 mV."

Then, in Claim 1 amended by the fourth amendment, the above recitation is changed to another recitation "a negatively charged substance having a peak zeta potential of -30 mV to -70 mV." Regarding the amendment by the fourth amendment, on page 3 of the written opinion dated the same date as the fourth amendment (hereinafter referred to as "the third opinion"), the Appellant states as follows: "This was just a clerical error that the recitation '70 mV' in the originally attached description lacked the minus sign (-) that should be recited. ... Normally, defining the zeta potential as one ranging around zero (0) means that only one kind of particle is referred to. Therefore, it should be said that person skilled in the art could not conceive of '+70 mV' in the spirit of the invention. The Applicant has realized that the recitation 'a zeta potential of -30 mV to -70 mV' should have been changed to 'a peak zeta potential of -30 mV to -70 mV' to be precise, and thus the Applicant corrected it accordingly."

However, the "originally attached description, etc." of the application includes no sentence directly stating "a peak zeta potential of -30 mV to -70 mV."

Here, on page 17 of the third opinion, there are provided the results of "zeta potential" measurement on "Snowtex-XS," which is mentioned in the sentence "Comparative Example 2 ... Snowtex-XS has a zeta potential of about -23 mV to -35 mV" in paragraph 0070 of the Description, as follows:

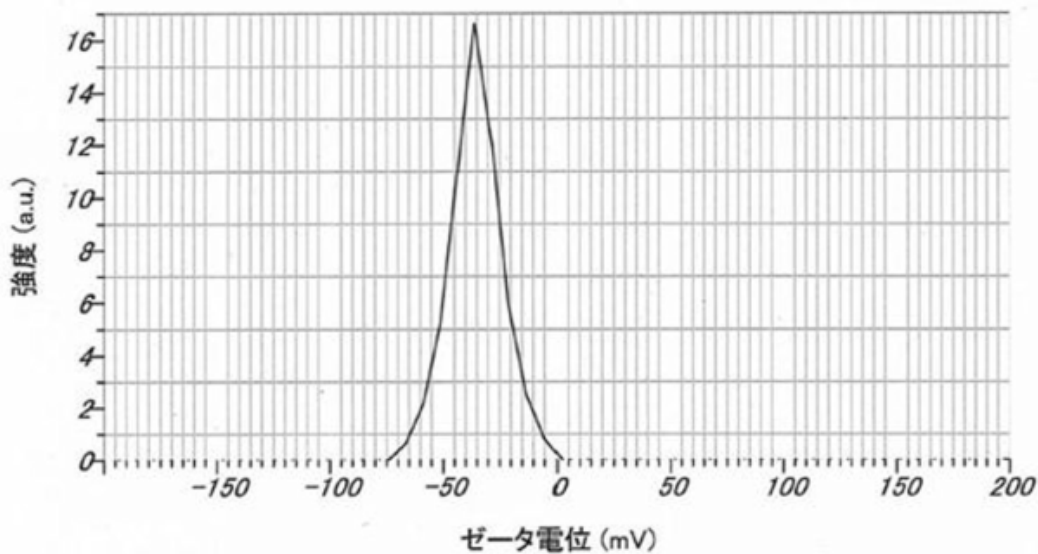


強度 Strength

ゼータ電位 Zeta potential

It shows that the zeta potential is in the range of +15 mV to -50 mV (i.e., ranges around zero (0)) and the peak zeta potential is -15.0 mV (not corresponding to "about -23 mV to -35 mV.")

On page 14 of the third opinion, there are provided the results of "zeta potential" measurement on "Hyper Glass N," which is mentioned in the sentence "Example 1 ... Silica particles: Hyper Glass N manufactured by Toso Sangyo Co., Ltd., one of the Applicants" in paragraph 0065 of the Description, as follows:



強度 Strength

ゼータ電位 Zeta potential

It shows that the zeta potential is in the range of +5 mV to -75 mV and the peak zeta potential is -35.3 mV.

It cannot be interpreted that the range of the zeta potential and the peak of the zeta potential mean synonymous contents.

The amendment in the above wording "should have be changed to 'a peak zeta potential of -30 mV to -70 mV' to be precise, and thus the Applicant corrected it accordingly" in the third opinion cannot be recognized as being made within the scope of the matters described in the originally attached description, etc.

Furthermore, on page 3 of the third opinion, the Appellant insists as follows: "(a) First, the distribution date of 'Attachment 1' itself attached to the first opinion is February 19, 2015. (b) Second, the product specifications of colloidal silica containing silica particles under the product name 'Hyper Glass N' have not changed at all since its launch. As an evidence, if necessary, an appropriate affidavit will be prepared and submitted. The description 'Example 1 ... Silica particles: Hyper Glass N manufactured by Toso Sangyo Co., Ltd., one of the Applicants.' in (0065) of the Description is clearly inadequate wording and should have been "colloidal silica containing silica particles: ..." or simply "colloidal silica:"

However, the distribution date of "Attachment 1" is after the filing date of the present application (March 3, 2014). Even if it is well understood that the product specifications of "Hyper Glass N" before the filing date of the present application had the physical property values as described in "Attachment 1" and had the physical property value of "peak zeta potential" as shown in the measurement results on page 14 of the third opinion, details of the physical property values of the "Hyper Glass N" are not disclosed in the originally attached description, etc. of the present application, and there were no circumstances such that the details of the physical property values could be said to be known to person skilled in the art as common general technical knowledge at the time of filing the present application. Thus, even if all the descriptions including the description "Hyper Glass N" in the originally attached description, etc. are combined, it cannot be said that the technical matters of the physical property values of the "average secondary particle size" and the "peak zeta potential" recited in the recitation "a negatively charged substance having a peak zeta potential of -30 mV to -70 mV and containing dispersed silica particles with an average secondary particle size of 5 nm or more and 18 nm or less" in Claim 1 of the present application can be derived.

Then, in combination with the fact the physical characteristics of the "silica particles" with the product name "Hyper Glass N" used in "Example 1" of the same

paragraph 0065 have not been clarified, it cannot be said that the above amendment corresponds to "one that is recognized not to introduce new technical matters in relation to the technical matters derived by summing up all the descriptions in the originally attached description, etc. by a person skilled in the art."

Therefore, the amendment made to the originally attached description, etc. of the present application was not made within the scope of the matters described in the originally attached description, etc., and thus does not satisfy the requirements under the stipulations of Article 17-2(3) of the Patent Act.

(2) Regarding the average secondary particle size

The first amendment includes an amendment that introduces the matter "a photocatalyst coating liquid wherein the negatively charged substance has a pH of 7 or more and 9 or less and an average particle size in the range of 5 nm or more and 18 nm or less and is contained at least in a proportion of about 40 wt% or more with respect to the entire photocatalyst coating liquid" into the recitation "photocatalyst coating liquid," and the same matter is also introduced into the second and third amendments.

Then, corresponding to the above recitation, Claim 1 amended by the fourth amendment states the matter that "a negatively charged substance having a peak zeta potential of -30 mV to -70 mV and containing dispersed silica particles with an average secondary particle size of 5 nm or more and 18 nm or less, the negatively charged substance and the photocatalyst particles repelling each other in a solvent containing the photocatalyst particle" as a matter specifying the Invention. On page 4 of the third opinion, the Appellant insists that "the logic of the assertion in the first opinion of the Applicants of the present application is to provide a supplementary explanation for the 'particle size' of 'Hyper Glass N' based on the description of 'Attachment 1,' and in this case, although it is not generally specified in its catalog or the like, it is supplementarily explained that 'as specified in Attachment 1, Hyper Glass N has an average secondary particle size of 5 nm or more and 18 nm or less,; by supplementing the term 'secondary particle size' that would be required to be described in the patent specification."

However, in the "originally attached description, etc." of the present application, there is no sentence directly describing the matter of "silica particles having an average secondary particle size of 5 nm or more and 18 nm or less."

Then, specific physical property values, such as the average particle size, pH value, and zeta potential of "Hyper Glass N," which is mentioned in the sentence "Example 1 ... Silica particles: Hyper Glass N manufactured by Toso Sangyo Co., Ltd., one of the Applicants" in paragraph 0065 of the Description are not described or suggested in the

originally attached description, etc. of the present application. Even if it should be understood that "a particle size of 5 to 18 nm" in the description of "

ハイパーグラスN

特徴 中性で小粒子径のコロイダルシリカです。

ハイパーグラスN	
SiO ₂ 濃度	17%
粒子径	5～18nm
pH	7.5～8.5
粘度	1～10mPa・s

ハイパーグラス N Hyper Glass N

特徴 Features

中性で小粒子径のコロイダルシリカです。 Neutral and small particle size colloidal silica.

SiO₂濃度 SiO₂ concentration

粒子径 Particle size

粘度 Viscosity

" in "Attachment 1" on page 5 of the first opinion means "an average secondary particle size," no evidence has been submitted to support the existence of any "technical common sense." Even if the "particle size" described in Attachment 1 is prospectively understood to mean the "average secondary particle size," it does not conform to the description of "The negatively charged substance of the present embodiment has a lower average primary particle size limit of 1 nm, preferably 5 nm. ... The negatively charged substance may have a particle size of more than 400 nm, and specifically may have an upper average secondary particle size of about 4000 nm." in paragraph 0044 of the Description.

Specifically, in the originally attached description, etc. of the present application, the lower particle size limit of the negatively charged substance is not "an average secondary particle size of 5 nm or more" but "an average primary particle size of 5 nm or more," and the upper "average secondary particle size" limit of the negatively charged substance is "about 4000 nm." Therefore, it cannot be said that introducing the matter that "silica particles having an average secondary particle size of 5 nm or more and 18 nm or less are dispersed" based on the product name corresponds to "one that is

recognized not to introduce new technical matters in relation to the technical matters derived by summing up all the descriptions in the originally attached description, etc. by a person skilled in the art."

Therefore, the amendment made to the originally attached description, etc. of the present application was not made within the scope of the matters described in the originally attached description, etc., and thus does not satisfy the requirements under the stipulations of Article 17-2(3) of the Patent Act.

2. Regarding Reason 4 (requirements for clarity)

Regarding the deficiencies in description as stated in "2. (3)" and "2. (4)" in the previous notice of reasons for refusal, by the fourth amendment,

the part corresponding to the recitation "the negatively charged substance has a pH of 7 or more and 9 or less and an average secondary particle size in the range of 5 nm or more and 18 nm or less and is contained at least in a proportion of about 40 wt% or more with respect to the entire photocatalyst coating liquid" in Claim 1 before the amendment is corrected to the recitation "the negatively charged substance has a pH of 7 or more and 9 or less and is contained in a proportion of 40 wt% or more and 60 wt% or less with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film;" and

the part corresponding to the recitation "the photocatalyst particles are contained in a proportion of 3 wt% to 70% with respect to the photocatalyst film produced using the photocatalyst coating liquid" in Claim 2 before the amendment is corrected to the recitation "the photocatalyst-containing material is contained in a proportion of 3 wt% to 70 wt% with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film," and, similarly, the part corresponding to the recitation " the resin is contained in a proportion of 3 wt% to 60 wt% with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film" is corrected to the recitation "the amount of the resin is selected from 3 wt% to 60 wt% with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film."

As a result, the concentration range of "40 wt% or more and 60 wt% or less" of the "negatively charged substance" of Claim 1 after the amendment and the concentration range of "3 wt% to 70 wt%" of the "photocatalyst-containing material" in Claim 2 after the amendment are significantly unclear in that the lower negatively charged substance concentration limit of "40 wt%" is technically inconsistent with the upper photocatalyst-containing material concentration limit of "70 wt%" (i.e., the total exceeds 100 wt%).

Furthermore, the definition of the amount of blending of the underlined part in the recitation such as "the negatively charged substance in a proportion of 40 wt% or more and 60 wt% or less with respect to the entire photocatalyst coating liquid in terms of an amount at the time of being dried to be a photocatalyst film" after the amendment is recited such that the technical content cannot be clearly grasped in Japanese in that it is unclear whether this is based on the "photocatalyst film" after "drying" or based on "the entire photocatalyst coating liquid," which is the liquid state before drying.

Therefore, in the recitation in the Scope of Claims in the present application, meaning of the matter specifying the invention regarding the concentration of the "negatively charged substance" in Claim 1 and the matters specifying the invention regarding the concentrations of the "photocatalyst-containing material" and the "resin" are "unclear enough to cause an unexpected disadvantage to a third party," and thus the invention for which a patent is sought is unclear. Consequently, the recitation of the Scope of Claims does not comply with requirements under the stipulations of Article 36(6)(ii) of the Patent Act.

In this regard, the Appellant alleges on page 2 of the third opinion as follows: "In retrospect, this quoted part and the part with the same description would have been easier to read if unified criteria were provided and described as 'photocatalyst particles : resin : silica particles are ...' or 'photocatalyst particles : resin : colloidal silica are ...'. However, according to the above quotation in paragraph (0007), it is not technically wrong, because the explanation part using the notation 'wt%' is the value converted to the amount when this is dried and made into a photocatalyst film." The Appellant also alleges on page 5 of the third opinion as follows: "The basis for this is the description 'In the Description, the description using the notation "wt%" for the photocatalyst coating liquid is a value converted into the amount when the photocatalyst coating liquid is dried to obtain a photocatalyst film.' in paragraph (0007) of the Description. Amendments have been made to add a description such as 'in terms of an amount at the time of being dried to be a photocatalyst film' to Claims 1 and 2 of the present application as appropriate to assure the clarity."

However, as a result of unifying the criteria, there was an inconsistency or contradiction in the range of the amounts of blending of the "negatively charged substance" in Claim 1 and the "photocatalyst-containing material" in Claim 2. As a result of adding the recitation "in terms of an amount at the time of being dried to be a photocatalyst film" as appropriate, the definition of the amount of blending after the amendment cannot be clearly grasped as stated above. Therefore, it cannot be said that

the amendment by the fourth amendment has also eliminated the deficiencies of 2(3) and (4) pointed out in the previous notice of reasons for refusal.

Furthermore, as a result of the fourth amendment, the recitation of Claim 1 is unclear in the following points.

Specifically, if interpreted as recited, it is acknowledged that "a photocatalyst-containing material including nano-order sized photocatalyst particles, the photocatalyst-containing material having neutral pH and being negatively charged" in Claim 1 is a product "included" in some kind of medium (e.g., a liquid composition in which photocatalyst particles are dispersed in some kind of solvent), which is "negatively charged" and "having neutral pH." Here, with respect to the recitation "having neutral pH," if "water" is assumed as the solvent, it is possible to assume that the product (liquid composition) is "having neutral pH." However, It cannot assume a mode that satisfies "negatively charged." Therefore, the recitation of Claim 1 is unclear.

In addition, if interpreted as recited, it is acknowledged that "a negatively charged substance having a peak zeta potential of -30 mV to -70 mV and containing dispersed silica particles" in Claim 1 is a product in which "silica particles" are "dispersed" in some kind of medium (e.g., a liquid composition in which silica particles are dispersed in some kind of solvent), which has "a peak zeta potential of -30 mV to -70 mV" and is "negatively charged." Here, the recitation "zeta potential" is a potential on the surface of solid particles, and the zeta potential of a liquid composition cannot be measured. Thus, a liquid composition satisfying the recitation "negatively charged" cannot be assumed. Therefore, the recitation of Claim 1 is unclear.

3. Regarding Reason 2 (enablement requirement)

Paragraph 0065 of the Description describes as follows: "(Example 1)

As a composition of a photocatalyst coating liquid,

a photocatalyst-containing material: Sagan Coat TPX-HL manufactured by Kon Corporation as stated above,

a resin: WBR manufactured by Taisei Fine Chemicals Co., Ltd. as a water-based urethane resin, and

silica particles: Hyper Glass N manufactured by one of the Applicants, Toso Sangyo Co., Ltd. was prepared. Then, the photocatalyst-containing material : resin : silica particles were mixed at a ratio of about 15 wt% : 30 wt% : 55 wt% to produce a photocatalyst coating liquid through the stirring step described above. The ratio described in the Description is considered to include the percentage up to about $\pm 10\%$ of

each specified numerical value."

Against this, on pages 9 to 10 of the third opinion, it is explained as follows: "We calculated the product-based mixing ratio of Sagan Coat TPX-HL, WBR, and Hyper Glass N when producing the photocatalyst coating liquid, which was instructed at the time of the interview. In the case of Example 1, the Sagan Coat TPX-HL was 6.0 L, the WBR was 0.5 L, and the Hyper Glass N was 1.4 L. Incidentally, the solid contents of Sagan Coat TPX-HL, WBR, and Hyper Glass N were set to 0.8 to 0.9 wt%, 25 wt%, and 17 wt%, respectively."

That is, those skilled in the art who have come into contact with the description in paragraph 0065 of the Description would understand that it is prepared by mixing in the weight ratio of 15 parts by weight of the product "Sagan Coat TPX-HL" itself as a photocatalyst-containing material, 30 parts by weight of the product "WBR" itself as a resin, and 55 parts by weight of the product "Hyper Glass N" itself as silica particles. However, in reality, it is designed to be prepared by mixing in the volume ratio described on page 9 of the third opinion such that they are mixed in volume ratio of "Sagan Coat TPX-HL 6.0L, WBR 0.5L, and Hyper Glass N 1.4L" as described on page 9 of the third opinion.

As a result, a person skilled in the art could not correctly understand the specific embodiment of the invention from the description of the Detailed Description of the Invention in the Description. As pointed out in the above 2, the meaning of the matters specifying the invention regarding the concentrations of "negatively charged substance," "photocatalyst-containing material," and "resin" in the recitations of Claims 1 and 2 of the present application is unclear. In combination with this, it cannot be said that even a person skilled in the art could produce and use the "photocatalyst coating liquid" or "photocatalyst film" of the invention recited in each of Claims 1 and 2 and other claims which depend therefrom.

Therefore, the description of the Detailed Description of the Invention in the Description of the present application is not so clear and sufficient as to enable a person skilled in the art to carry out the inventions recited in Claims 1 to 5, and thus does not comply with Article 36(4)(i) of the Patent Act.

4. Reason 3 (support requirement)

(1) Fulfillment of support requirement by the Description

In general, "Whether the recitation of the Scope of Claims satisfies the support requirement of a Description should be determined by considering, through comparison of the recitation of the Scope of Claims and the description of the Detailed Description of

the Invention, whether the invention recited in the Scope of Claims is the invention described in the Detailed Description of the Invention that is within the scope for which a person ordinarily skilled in the art can recognize, based on the description of the Detailed Description of the Invention, that the invention can solve the problem of the invention, and also by considering whether the invention recited in the Scope of Claims is an invention within the scope which a person ordinarily skilled in the art can recognize, in light of the common general technical knowledge as of the time of filing the application, that the invention can solve the problem of the invention, even without the statement and indication thereof. For the existence of the support requirement of the Description, it is reasonable to understand that the patent applicant (...) ... assumes the burden of proof. ... This naturally includes the purpose of clarifying that the range indicated by the formulas is not a matter of mere speculation but is supported by experimental results." (See the determination 2005 (Gyo-Ke) 10042).

(2) The problem to be solved by the invention

In view of the full description of the Detailed Description of the Invention including: "An object of the present invention is to provide a photocatalyst coating liquid under conditions for avoiding each of the above problems and a photocatalyst film using the same." in paragraph 0004 of the Description; "visual observation of appearance ... evaluation of appearance ... transparency ... adhesion ... surface roughness ... hardness ... decomposition activity ... total light transmittance" in paragraph 0074 of the Description; and "based on the above indices, the total score of each example and each comparative example is calculated" in paragraph 0086 of the Description, it is recognized that the problem to be solved by the inventions recited in Claims 1 to 5 of the present application lies in providing a photocatalyst coating liquid and a photocatalyst film using the same, which are excellent in visual appearance observation, appearance evaluation, transparency, adhesion, surface roughness, hardness, decomposition activity, and total light transmittance evaluation results.

(3) Regarding Comparative Example 1

On page 7 of the third opinion, the Appellant alleges as follows: "It is correct to recognize that the photocatalyst particles in the photocatalyst-containing material of Comparative Example 1 have an average particle size of '60 nm to 65 nm' and satisfy the requirements of 'nano-order size photocatalyst particles.' However, for example, when 'Titania Sol STS-01 manufactured by Ishihara Sangyo Co., Ltd.' used in Comparative Example 1 is mixed with 'Hyper Glass N manufactured by Toso Sangyo Co., Ltd.,' it

cannot 'realize uniform distribution' of the photocatalyst particles in the photocatalyst-containing material.' The cause of this is that 'Hyper Glass N' belongs to the neutral range of pH 7.5 to 8.5, while 'Titania Sol STS-01' belongs to the strongly acidic range of pH 1.5, and thus the pH gap is so large that aggregation occurs. As a result, the photocatalyst film turns to 'white,' has poor appearance, and does not have the degrading activity of photocatalyst particles."

However, the Detailed Description of the Invention in the Description lacks any description that the "nano-order sized photocatalyst particles" called "Titania Sol STS-01" belong to a strongly acidic region of pH 1.5. The amendment by the fourth amendment changes the matter of "nano-order sized photocatalyst particles" in Claim 1 before the amendment, which corresponds to the invention-specific matter, into "a photocatalyst-containing material including nano-order sized photocatalyst particles , the photocatalyst-containing material having neutral pH and being negatively charged" in Claim 1 before the amendment, thereby limiting the photocatalyst-containing material into one having a "having neutral pH." However, depending on the wording for the Detailed Description of the Invention including the description of "test results" of Examples 1 to 3 and Comparative Examples 1 and 2 of the Description, it cannot be said that a person skilled in the art could correctly grasp or recognize the technical meaning of the relationship between the invention-specific matter of "a photocatalyst-containing material including nano-order sized photocatalyst particles , the photocatalyst-containing material having neutral pH and being negatively charged" recited in Claim 1 of the present application and the obtained effect (performance).

Therefore, it cannot be recognized that the invention recited in Claim 1 and the inventions recited in other claims, which depend from Claim 1, of the present application are those described in the Detailed Description of the Invention, and are within the range that allows a person skilled in the art to recognize that the problem of the invention can be solved with the Detailed Description of the Invention. Furthermore, it is not recognized that the invention is within the range allowing a person skilled in the art to recognize that the problem of the invention can be solved in light of the common general technical knowledge at the time of filing even without the description or suggestion thereof. The recitations of Claim 1 and other claims, which depend therefrom, of the present application do not comply with Article 36(6)(i) of the Patent Act.

(4) Regarding the numerical ranges of zeta potential and pH

On page 8 of the third opinion, the Appellant alleges as follows: "In paragraph (0070) of the Description, there is described 'Snowtex-XS has a zeta potential of about

-23 mV to -35 mV.' However, it is recognized that actual measurement values include a peak of '-15 mV,' do not fall within such a range, and are lower values (positive-sided values) that do not overlap with the zeta potential specified in Claim 1 of the present application."

However, paragraph 0070 of the Description describes that the zeta potential of the silica particles of Comparative Example 2 is "-23 mV to -35 mV," which has not been specially amended. Thus, a person skilled in the art who came into contact with such a description could not recognize that the problem prescribed in the present application can be solved when the zeta potential is in the range of "-30 mV to -35 mV." It cannot be recognized that all of the wide numerical range of "-30 mV to -70 mV" of Claim 1 of the present application is within a range that allows a person skilled in the art to be able to solve the above problem.

Then, in the Detailed Description of the Invention of the Description, the colloidal silica called "Hyper Glass N" used in the specific examples of Examples 1 to 3 of the Description is not described as one at "a peak zeta potential" that satisfies the matter specifying the invention such as "having a peak zeta potential of -30 mV to -70 mV" (as stated on page 9 of the Third Opinion, it is not stated as one at a peak zeta potential value of -35.3 mV.) Therefore, depending on the wording for the Detailed Description of the Invention including the description of "test results" of Examples 1 to 3 and Comparative Examples 1 and 2 of the Description, it cannot be said that a person skilled in the art could correctly grasp or recognize the technical meaning of the relationship between the invention-specific matter of "a negatively charged substance having a peak zeta potential of -30 mV to -70 mV and containing dispersed silica particles with an average secondary particle size of 5 nm or more and 18 nm or less, the negatively charged substance and the photocatalyst particles repelling each other in water containing the photocatalyst particles" and the obtained effect (performance).

On page 8 of the third opinion, the Appellant alleges that "the product 'Hyper Glass N' used in Examples 1 to 3 is described as one at pH 7.5 to 8.5 in its Safety Data Sheet (SDS)."

However, the Detailed Description of the Invention in the Description does not reveal the pH value of the "Hyper Glass N". In paragraph 0070 of the Description of the present application, the pH of the silica particles of Comparative Example 2 is described as "about 9.5 to 10" and has a very low performance as described in paragraph 0086. Therefore, it is not recognized that all of the wide numerical range of "pH 7 or more and 9 or less" including the vicinity range of pH 9 stated in Claim 1 of the present

application (pH range of about 8.50 to 9.49 with significant figures) is within the range recognized by a person skilled in the art that the above problem can be solved.

Therefore, it cannot be recognized that the invention recited in Claim 1 and the inventions recited in other claims, which depend from Claim 1, of the present application are those disclosed in the Detailed Description of the Invention, and are within the range that allows a person skilled in the art to recognize that the problem can be solved with the Detailed Description of the Invention. Furthermore, it is not recognized that the invention is within the range allowing a person skilled in the art to recognize that the problem of the invention can be solved in light of the common general technical knowledge at the time of filing even without the description or suggestion thereof. The statements of Claim 1 and other claims, which depend therefrom, of the present application do not comply with Article 36(6)(i) of the Patent Act.

(5) Regarding the amounts of blending of negatively charged substance, photocatalyst particles, and resin

On page 8 of the third opinion, the Appellant alleges as follows: "Regarding the evaluation that the numerical range is wide, a person skilled in the art who has come into contact with the principle of the invention of the present application stated above would consider that, as long as it contains the minimum mixing amount at which each of the constituent materials of the photocatalyst coating liquids of Examples 1 to 3 can exert its unique function, the remainder is only necessary to increase the mixing ratio of the photocatalyst-containing material in order to, for example, further increase the degrading activity."

However, no matter what "principle" is considered, as shown in the above 2, the relationship between the concentration range of "40 wt% or more and 60 wt% or less" of the "negatively charged substance" of Claim 1 after the amendment and the concentration range of "3 wt% to 70 wt%" of the "photocatalyst-containing material" of Claim 2 after the amendment is technically feasible when the upper limit of the photocatalyst-containing material is "70 wt%" whereas the lower limit of the negatively charged substance is "40 wt%."

Then, depending on the description of "test results" and "mechanism of action" in the Detailed Description of the Invention of the Description, even if the "technical common sense" at the time of filing the application is taken into consideration, all of the wide numerical range of "40 wt% or more and 60 wt% or less" stated in Claim 1 of the present application and all of the wide numerical range of "3 wt% to 70 wt%" and "3 wt%

to 60 wt%" stated in Claim 2 of the present application cannot be admitted within the range that a person skilled in the art could recognize that the above problem can be solved.

(6) Regarding the uncured resin

On page 9 of the third opinion, the Appellant alleges as follows: "The notice of reasons for refusal points out that even if the problem can be solved by using a specific 'water-based urethane resin' called 'WBR,' it cannot be said that it is not the case with other than the specific resin. Certainly, this point is correct. Thus, Claim 1 of the present application is amended regarding the total light transmittance so that the reason for refusal of Claim 4 of the present application before the amendment is indirectly eliminated by the amendment."

However, the "resin" before the amendment was limited to the "uncured" resin, while the range of the "resin" after the amendment is expanded to one not limited to the "uncured" resin. There is no concrete basis for extending or generalizing the invention to other than the "uncured" resin.

In addition, the Appellant does not specifically indicate any technical basis for equivalent resin properties regardless of whether the resin is "solvent-based" or "water-based."

Furthermore, no evidence is shown that the usefulness of "appearance," "transparency," "adhesion," "hardness," "degrading activity," and "total light transmittance" of the resin is equivalent in the broad range of "solvent-based or water-based resin" after the amendment.

Then, even if it is supported that the above problem can be solved by using a specific "water-based urethane resin," the "WBR manufactured by Taisei Fine Chemicals Co., Ltd." in paragraph 0065 of the Description, it cannot be recognized, even when the "common general knowledge" at the time of filing the present application is taken into consideration, that, based on the descriptions of "test results" and "mechanism of action" in the Detailed Description of the Invention in the Description, all of the wide range of "solvent-based or water-based resin" recited in Claim 1 of the present application is within a range that can be recognized by a person skilled in the art as being able to solve the above problem.

(7) Summary

Therefore, it cannot be recognized that the inventions recited in Claims 1 and 2 of the present application and the inventions recited in other claims, which depend from Claim 1, are those disclosed in the Detailed Description of the Invention, and are within

the range that allows a person skilled in the art to recognize that the problem can be solved with the Detailed Description of the Invention. Furthermore, it is not recognized that the invention is within the range allowing a person skilled in the art to recognize that the problem of the invention can be solved in light of the common general technical knowledge at the time of filing even without the description or suggestion thereof. The recitation of Claims 1 to 5 of the present application do not comply with Article 36(6)(i) of the Patent Act.

No. 5 Closing

As stated above, regarding the present application, amendments made to the Description and the Scope of Claims attached to the application of a patent application do not satisfy the requirements stipulated in Article 17-2(3) of the Patent Act. The present application does not satisfy the requirements stipulated in Article 36(4)(i) and (vi) of the Patent Act. Therefore, the present application falls under the stipulations of Article 49(1) and (4) of the Patent Act. Thus, the present application should be rejected without further examination.

Therefore, the appeal decision shall be made as described in the conclusion.

November 4, 2020

Chief administrative judge: AMANO, Hitoshi
Administrative judge: KIMURA, Toshiyasu
Administrative judge: KURANO, Masaaki