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**Datasheet for the decision  
of 18 September 2008**

**Case Number:** T 0700/05 - 3.3.07

**Application Number:** 95935582.7

**Publication Number:** 0737513

**IPC:** B01J 21/06

**Language of the proceedings:** EN

**Title of invention:**

Titanium oxide photocatalyst structure and method of  
manufacturing the same

**Patentee:**

KANAGAWA ACADEMY OF SCIENCE AND TECHNOLOGY, et al

**Opponents:**

01: AGC Flat Glass Europe SA  
02: PPG Industries, Inc.

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 70(1), 70(2), 101(3), 123(2), 123(3)  
EPC R. 80, 139

**Relevant legal provisions (EPC 1973):**

EPC Art. 14(1), 14(2), 84, 100(c), 111, 150(3), 158(2)

**Keyword:**

"Error of translation - correction in opposition proceedings  
allowable under Article 14(2) EPC 1973"

"Corrected translation in opposition proceedings is an  
amendment within the meaning of Article 101(3) EPC 2000"

"Degree of precision for a measurement not specified - lack of  
clarity (no)"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 0700/05 - 3.3.07

**DECISION**  
of the Technical Board of Appeal 3.3.07  
of 18 September 2008

**Appellant:**

(Patent Proprietor)

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and

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**Representative:**

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**Decision under appeal:**            **Decision of the Opposition Division of the  
European Patent Office posted 23 March 2005  
revoking European patent No. 0 737 513 pursuant  
to Article 102(1) EPC.**

**Composition of the Board:**

**Chairman:**            S. Perryman  
**Members:**            F. Rousseau  
                          B. Struif

## Summary of Facts and Submissions

I. The Appellants (Patent Proprietors) lodged an appeal on 1 June 2005 against the decision of the Opposition Division issued in writing on 23 March 2005 revoking European patent 0 737 513.

II. The patent was granted on European patent application No. 95935582.7, originally filed as International Patent Application PCT/JP95/02214 on 30 October 1995 at the Japanese Patent Office in the Japanese language and published under WO 96/13327. The English translation filed at the European Patent Office had claims 1, 2, 3 and 6 reading as follows:

"1. A titanium dioxide photocatalyst structure comprising:

a titanium dioxide film which has at least photocatalytic activity and light transmittance corresponding to light having a wavelength of 550 nm is not less than 50 % and is formed on a transparent substrate.

2. The titanium dioxide photocatalyst structure according to claim 1, wherein the titanium dioxide film is 0.1 to 5  $\mu$ m in thickness.

3. The titanium dioxide photocatalyst structure according to claim 1 or 2, wherein the titanium dioxide film contains at least an anatase crystal.

6. The titanium dioxide photocatalyst structure according to claim 1, 2, 3, 4 or 5, wherein the transparent substrate is made of glass.

III. The patent as granted comprised seven claims, claim 1 reading as follows:

"1. A titanium dioxide photocatalyst structure comprising:  
a transparent substrate and  
  
a titanium dioxide film having photocatalytic activity and a light transmittance of at least 50% for light having a wavelength of 550 nm,  
  
wherein the titanium dioxide film contains anatase crystals and has a thickness of 0.1 to 5µm."

IV. Notices of opposition had been filed by Opponents I and II (hereafter referred to as Respondents I and II), in which the revocation of the patent in its entirety was requested on the grounds of lack of novelty and inventive step under Article 100(a) EPC 1973.

V. With a letter dated 1 February 2005, a new set of claims 1 to 6 was submitted in the opposition proceedings, with claim 1 reading as follows (for ease of understanding the Board has indicated the additions to claim 1 as granted in bold and underlined):

"1. A titanium dioxide photocatalyst structure comprising:  
  
a transparent **soda lime glass** substrate and

a titanium dioxide film having photocatalytic activity and a linear light transmittance of at least 50% for light having a wavelength of 550 nm, wherein the titanium dioxide film contains anatase crystals and has a thickness of 0.1 to 5µm."

VI. The Patent Proprietors requested the amplification to the expression "linear light transmittance" under Rule 88 EPC 1973, since this was the correct English equivalent of the Japanese wording used in the original PCT application, which had been erroneously translated upon entry into the regional phase to simply read "light transmittance". With letter dated 21 February 2005, the Proprietors submitted a certified English translation of the pertinent passages of the Japanese PCT application and corresponding explanations. On 23 February 2005, a full copy of the certified English translation of the Japanese PCT application was also submitted.

VII. Oral proceedings before the Opposition Division were held on 1 March 2005 in the course of which an objection to lack of clarity of claim 1 in view of the expression "linear light transmittance" was raised for the first time. The decision of the Opposition Division was based in particular on the following documents:

D17 Brochure concerning the Spectrophotometer UV-31 01 PC, UV-VIS-NIR from Shimadzu Corporation, and

D18 ASTM Standard D 1003-61, Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics, 1988.

VIII. The reasoning of the contested decision can be summarised as follows :

- Rule 88 EPC 1973 could not form the basis for correction of a translation error, since the requirements for a correction under Rule 88 EPC 1973, namely that both the error and the correction should be obvious from the document to be corrected, i.e. the English translation of the original PCT application, were not fulfilled.
- The replacement of the wording "light transmittance" by "linear light transmittance" was nevertheless mandatory in view of Article 123(2) EPC 1973, since the wording as used in the granted patent had no basis in the International application as filed.
- As none of the available prior art disclosed the parameter "linear light transmittance", not even document D17, i.e. the brochure of the apparatus which was used in the patent in suit for that measurement, this parameter was not considered to be common in the art.
- It was also questionable whether a direct measurement of the linear light transmittance using the spectrophotometer mentioned in the patent in suit or the calculated difference of the measured total light transmittance and the



diffused light transmittance, both determined according to document D18 would lead to the same result, because document D18 stipulated an angle beyond which the transmitted light was considered to contribute to the diffused transmittance.

- In addition, the parameter "linear light transmittance", was so uncommon in the art that a reasonable comparison with the prior art was impossible, possibly disguising a lack of novelty.
- For these reasons, the presence of the parameter "linear light transmittance" rendered claim 1 unclear, contrary to the requirements of Article 84 EPC.

IX. With the statement setting out the grounds for appeal, dated 2 August 2005, the Appellants submitted a set of claims 1 to 6 as auxiliary request and the following documents :

- D24 Gyozo Toda, Koji Ishida, "Optical Ceramics and Optical Fibre," published by Gihodo Shuppan Co., Ltd., 1983; and a partial English translation thereof,
- D25 "Electronic Ceramic", Evaluation technique of ceramics of January '86 issue, Vol. 17, No. 79, 1985; and a partial English translation thereof,
- D26 1987 Electricity and Information-related Academic Conference Association Convention, September 10-12, 1987, Tokyo, Japan, Institutes of Electrical and Information Engineers, "12. Research Direction of

Translucent Ceramics"; partial English translation of lecture paper No. 12-1. "current state of translucent ceramics" and

- D27 Instruction Manual for the Spectrophotometer UV-3101 PC, UV-VIS-NIR from Shimadzu Corporation, 1994.
- X. Oral proceedings before the Board took place on 18 September 2008.
- XI. The Appellants' arguments can be summarized as follows:
- (a) A correction of a translation error under Article 14(2) EPC 1973 was not limited to the examination phase.
  - (b) The wording "linear light transmittance" was the original wording and its insertion in present claim 1 constituted a mere correction of an obvious error, which did not change the technical meaning of the claim and the patent as a whole.
  - (c) The claimed subject-matter was the same as before, with the consequence that it could neither infringe Article 123(2) EPC, nor Article 123(3) EPC.
  - (d) Thus, the replacement of the wording "light transmittance" by "linear light transmittance" did not constitute an amendment of the claimed subject-matter, and conformity of this expression with the requirements of Article 84 EPC was not a matter open to consideration in opposition or appeal proceedings.

- (e) In any event, the replacement of the wording "light transmittance" by "linear light transmittance" did not introduce any lack of clarity. The meaning of the term "linear light transmittance" and how to measure this parameter were known in the art, as could be taken from documents D24 to D26. The fact that these documents referred to technology remote from photocatalysts was irrelevant because the measuring method as such was independent of the technical field.
  
- (f) The patent in suit defined in paragraph [0038] of the description a standardized test procedure to measure this parameter by the use of the spectrophotometer UV-3100PC manufactured by Shimadzu Co.. In the absence of any contrary indication in the patent in suit, the skilled person would use a standard configuration of the apparatus, which would lead directly to the linear light transmittance.
  
- (g) In addition, the measurement method and measurement conditions for determining the "linear light transmittance" by using said spectrophotometer were fully described in document D27. The light transmittance of the film was measured along the axis of the incident beam. Due to the construction of the spectrophotometer, only the light linearly transmitted was allowed to reach the light detector and therefore was measured. Apart from the lamps which could be changed depending on the wavelength to be measured

and the sample compartment which had to be accessible, no other parts of the apparatus were accessible or open to modification.

- (h) By using the substrate as reference the influence of the substrate on the measurement could be eliminated.
- (i) The thickness of the film did not have any influence on the aperture angle.
- (j) Since paragraph [0038] of the patent in suit did not mention the use of an integrating sphere in the spectrophotometer UV 3100PC, which sphere was otherwise used for the measurement of translucent, opaque or turbid samples, the skilled person would have understood that the linear light transmission was to be directly measured in the absence of such an integrating sphere.
- (k) Hence, the feature "a linear light transmittance of at least 50% for light having a wavelength of 550 nm" was clearly defined and claim 1 met the requirements of Article 84 EPC.

XII. The arguments of Respondents I and II can be summarized as follows:

- (a) While a correction of a translation error could be rectified under the provisions of Article 14(2) EPC 1973, the replacement of the wording "light transmittance" by "linear light transmittance" still constituted an amendment within the meaning of Article 123 EPC.

- (b) The wording "light transmittance" in claim 1 as granted had to be understood as the total light transmittance. It had therefore a different meaning than linear light transmittance.
  
- (c) In view of Article 101(3) EPC, it had to be examined whether any change of the claim language after grant was in keeping with the requirements of the Convention. Although claim 1 as amended was not objected to under Article 123(2) or 123(3) EPC, an issue of clarity in relation to the feature "a linear light transmittance of at least 50% for light having a wavelength of 550 nm" arose.
  
- (d) It had not been shown that the "linear light transmittance" was a usual parameter in the technology concerned by the patent in suit, namely transparent photocatalytic structures such as window glass, as documents D24 to D26, which were the sole documents cited dealing with linear light transmittance, related to a different technical field.
  
- (e) It appeared from documents D24 to D26 that the key problem in measuring linear light transmittance was to distinguish between scattered light and light passing through the object without scattering. Thus a measurement of "linear" light transmittance was strongly dependent on the actual method and apparatus used, and on the specific set-up of the apparatus, which set-up could usually be modified.

- (f) The contribution by scattered light to the measurement of "linear" light transmittance depended in particular on the aperture angle of the transmitted light, which needed to be selected depending on the transparency of the sample. For substrate exhibiting significant scattering, small variations in the angle of measurement, would result in significant differences in the measured value of "linear" light transmittance.
  
- (g) The present claims required that the linear light transmittance should be at least 50% which was just between opaque and fully transparent. Consequently, the aperture angle would have a significant influence on the values obtained. Thus, although the skilled person understood the meaning of the wording "linear light transmittance", he was aware that a numerical value for a linear light transmittance only made sense if the exact conditions and methods for measuring this value were given. Hence, in the absence of a stated standardized procedure, the reference to "linear light transmittance" values in the claim was meaningless and not suitable to define a precise scope of protection.
  
- (h) Furthermore, document D27 had not been shown to contain reference to measurements of the linear light transmittance.
  
- (i) In addition, the distance between the sample and the beam cutting device, placed before the light detector, was not specified for the spectrophotometer disclosed in document D27, so

that the portion of the transmitted beam corresponding to the linear light transmittance could not be determined. In the absence of this measurement condition, one could not precisely determine the linear light transmission when using a different spectrophotometer than that disclosed in the patent in suit, because one would not know how to adjust the spectrophotometer in order to be within a similar margin of error.

- (j) Respondents II also argued that the thickness of the sample had an influence on the distance between the sample and the detector and therefore on the aperture angle, which allegation was not confirmed by the Expert of Respondents I.
- (k) Respondents I argued that the light transmittance should be measured over the whole spectrum, as the transparency of the sample varied as a function of the wavelength. Thus, the transparency at 550 nm was not representative of the transparency of the sample.
- (l) Consequently, claim 1 of the main request, by failing to indicate the precise measuring method and conditions to be used to determine the parameter "linear light transmittance", defined, did not meet the requirement of clarity of Article 84 EPC.

XIII. The Appellants requested that the decision under appeal be set aside and the case be remitted for further prosecution by the first instance on the basis of the set of claims 1 to 6 submitted on 1 February 2005 as

main request or on the basis of the set of claims 1 to 6 submitted on 2 August 2005 as auxiliary request.

XIV. The Respondents requested that the appeal be dismissed, or that the case be remitted to the first instance for further prosecution.

XV. At the end of the oral proceedings, the decision of the Board was announced.

### **Reasons for the Decision**

1. The appeal is admissible.

*Preliminary remark - Applicability to the present case of the provisions under the EPC 2000 and EPC 1973*

2. For the purpose of this decision it is necessary as a preliminary matter to decide whether it is the provisions of Articles 14, 70, 84, 100, 101, 111, 123 and 153 in the version of the EPC 1973 or in the version of the EPC 2000 (in which Articles 101 and 102 EPC 1973 have been combined into a single Article 101 EPC 2000) that are to be applied in the present case. The Board would, however, remark that the differences between the EPC 1973 and EPC 2000 are mainly in the wording rather in the substance, and so not of significance to the outcome in this case.

2.1 The revised version of the European Patent Convention or EPC 2000 entered into force on 13 December 2007. At that time, the present patent had been already granted.



2.2 Pursuant to Article 7(2) of the Act, dated 29 November 2000, revising the European Patent Convention of 5 October 1973 (Special Edition No. 1 OJ EPO, 196), the revised version of the Convention (EPC 2000) shall not apply to European patents already granted at the time of its entry into force, unless otherwise decided by the Administrative Council of the European Patent Organisation.

2.2.1 By its decision of 28 June 2001 (Special Edition No. 1 OJ EPO 2007, 197), which also entered into force on 13 December 2007 (Article 8 of that decision), the Administrative Council pursuant to the powers given it under Article 7 of the said Act of 29 November 2000 laid down in Article 1.1 of that decision that Articles 14(3)-(6), 51, 52, 53, 54(3) and (4), 61, 67, 68 and 69, the Protocol on the Interpretation of Article 69, and Articles 70, 86, 88, 90 92, 93, 94, 97, 98, 106, 108, 110 115, 117, 119, 120, 123, 124, 127, 128, 129, 133, 135, 137 and 141 EPC 2000 shall apply to European patent applications pending at the time of their entry into force and to European patents already granted at that time.

2.2.1 By Article 2 of the decision of 28 June 2001 of the Administrative Council, the Administrative Council laid down that Articles 65, 99, 101, 103, 104, 105, 105a-c and 138 EPC 2000 shall apply to European patents already granted at the time of its entry into force and to European patents granted in respect of patent applications pending at that time.

2.3 With a further decision of 7 December 2006 (Special Edition No. 1 OJ EPO 2007, 89), the Administrative

Council decided on the Implementing Regulations to the EPC 2000. These Implementing Regulations came into force on 13 December 2007 replacing the previous Implementing Regulations without any transitional provisions.

2.4 Thus in accordance with the above mentioned provisions, it is Articles 14(1) and (2), 84, 100, 111 and 153 of the EPC 1973 that are to be applied in the present appeal case and not the corresponding provisions of the EPC 2000.

2.5 Further it is the provisions of Articles 70, 101(3) and 123 EPC 2000 and those of Rules 80 (equivalent to Rule 57a EPC 1973) and 139 EPC 2000 (equivalent to Rule 88 EPC 1973), that are to be applied in the present case and not the corresponding earlier rules.

*Correction of translation error under Rule 139 EPC*

3. The Appellants have requested during the opposition proceedings and in the appeal proceedings the replacement of the expression "light transmittance" in claim 1 by "linear light transmittance" (underlining and bold added by the Board for emphasis), as the PCT application as filed had been erroneously translated upon entry into the regional phase to simply read "light transmittance"

3.1 According to document D24 submitted by the Appellants total light transmittance is the sum of the linear light transmittance and the diffusing light transmittance (light deviating from the incident beam by forward scattering or haze). The Appellants argued

that "light transmittance" in the text of the patent as originally granted would be understood by the skilled reader to mean "linear light transmittance" and that the need for the change and the corrected version would be immediately evident to the skilled reader so that the correction could be made under the provisions of Rule 139 EPC 2000 (formerly Rule 88 EPC 1973). The Respondents, on the contrary, argued that the reader would have understood rather that "light transmittance" meant the "total light transmittance". The Board considers either view possible, so that the Appellants, even if they had convinced the Board that a correction of translation in present claim 1 could be legally dealt with under the provisions of Rule 139 EPC, would have failed to make out a case for a correction meeting the stringent requirements of that Rule.

*Correction of translation error under Article 14 EPC 1973*

4. The international patent application PCT/JP95/02214, was filed in Japanese language at the Japanese Patent Office by an applicant having its place of business in Japan. The international application designated the European Patent Office for some sixteen Contracting States, and was thus deemed to be a European patent application pursuant to Article 150(3) EPC 1973. A translation into English of this international application was provided to the EPO, as prescribed by Article 158(2) EPC 1973 in conjunction with Article 14(1) EPC 1973.

4.1 Article 14(2) EPC 1973 relates to applications filed at the EPO by a natural or legal person having their residence or principal place of business within the

territory of a Contracting State having a language other than English, German or French. Such applicants may file an application at the EPO in the official language of that Contracting State, but then need to file a translation into an official language of the EPO. Article 14(2) EPC 1973 states in its last sentence that "throughout the proceedings before the European Patent Office, such translation may be brought into conformity with the original text of the application".

- 4.1.1 Taking into account that Euro-PCT applications are deemed by Article 153(2) to be European applications and the principle that they thus must be treated as favourably as applications made in a Contracting State, a PCT application originally filed in Japanese must be treated in the same way as an application filed in the language of a Contracting State which language is not an official language of the EPC. The provision of Article 14(2) EPC 1973 must thus be applied by analogy to allow also the translation into English of an original PCT application in Japanese to be brought into conformity with the original Japanese text of the application throughout the proceedings before the European Patent Office, i.e. also including opposition and appeal proceedings.

- 4.2 In the present case, the original text of the application did not disclose "a light transmittance of at least 50%", but in view of the certified English translation provided by the Patent Proprietors only "a linear light transmittance of at least 50%". The Respondents did not dispute that the original application had been mistranslated and that the expression "a light transmittance of at least 50%" in

claim 1 and elsewhere should be replaced by "a **linear** light transmittance of at least 50%", in line with the provisions of Article 14(2) EPC 1973. The Board has no reason to take a different view.

*Amendment of text of granted patent*

5. Article 70(1) EPC 2000 provides that the text of a European patent in the language of the proceedings shall be the authentic text in any proceedings before the European Patent Office. Article 70(2) EPC 2000 provides that if the European application has been filed in a language which is not an official language of the European Patent Office that text shall be the application as filed within the meaning of the Convention. This means that a post-grant change to the granted text of a European patent amounts to an amendment of text of the patent as granted, even where, as in the present case, the change is justified as a correction necessary to bring the text into conformity with the originally filed Japanese language PCT application.

5.1 Specifically for this case, the correction in the claims and description of the granted text of the patent to read "**linear** light transmittance" is an amendment which under Article 101(3) EPC 2000 needs to be checked for conformity with the requirements of the convention, and in particular for conformity with Articles 84 EPC 1973 (whose wording is unchanged in the EPC 2000) and Article 123(2) and (3) EPC 2000.

5.2 As the original application in the Japanese language did not disclose a film having "a light transmittance

of at least 50%", but in view of the certified English translation received on 21 February 2005 a film having "a **linear** light transmittance of at least 50%", the correction proposed by the Appellants is necessary in these proceedings before the Board to overcome a ground of opposition under Article 100(c) EPC 2000 (or Article 100(c) EPC 1973 before the Opposition Division) as the subject-matter of the granted European patent extended beyond the content of the original Japanese language PCT application. The amendment thus also meets the requirements of Article 123(2) and Rule 80 EPC 2000, which was not disputed.

- 5.3 Claim 1 now requires the film to have a linear light transmittance of at least 50%. Compared to the wording of the claim as granted requiring the film to have a light transmittance of at least 50% this is a restriction of the scope of the claim if the original wording is taken to refer to the "total light transmittance", since the total light transmission will be at least as great as the linear light transmittance. If the original wording of the claim as granted is taken to refer to the linear light transmittance there is no change in the extent of protection. In either case the requirements of Article 123(3) EPC are met, as there is no extension of the scope of protection. This was not disputed by the Respondents.

*Clarity of amended claim 1 under Article 84 EPC 1973*

6. Since claim 1 has been amended, objections under Article 84 EPC 1973 may be raised against it for any lack of clarity introduced by the amendment.

6.1 It is undisputed that the linear light transmittance of a substance at a given wavelength can be defined as the amount of incident light having said wavelength that passes through this substance without being scattered. The arguments of the Respondents focus on the fact that there is no indication as to exactly how and with what precision the measurement of "a **linear** light transmittance of at least 50% for light having a wavelength of 550 nm" is to be made for the present titanium dioxide film. In order to put the significance of the linear light transmittance in the context of the present invention, three particularly relevant passages of the description can be cited. Firstly in the corrected text (including the amendment to "linear light transmittance) of the granted patent, paragraph [0021] (lines 27-41 of column 4) there appears the passage:

"....Simultaneously, as a consequence of setting the titanium dioxide film in such a manner that the linear light transmittance corresponding to light having the wavelength of 550 nm is not less than 50 %, sufficient transparency corresponding to visible light can be secured inevitably. Consequently, this titanium dioxide photocatalyst structure can be used as a member of various structures especially required to have the transparency, for example, a glass window. The present invention can have distinguished advantages in that elimination carbon dioxide and air pollutants (for example, NO<sub>x</sub> and SO<sub>x</sub>) from indoor space, deodorizing the indoor space and making the indoor space antibacterial, soil-resistant and mildew-proof are achieved by the

window pane itself without using special equipment..."

Secondly in the corrected text of the granted patent, paragraph [0022] (lines 1-14 of column 5) reads as follows:

"In accordance with the invention, a titanium dioxide film having sufficient photocatalytic activity and simultaneously having the linear light transmittance, which is not less than 50 % correspondingly to light having a wavelength of 550 nm, can be obtained by setting the thickness of the titanium dioxide tin film at a value of .1 to 5  $\mu\text{m}$ . In the case that the thickness of the photocatalyst structure is less than 0.1  $\mu\text{m}$ , sufficient photocatalytic activity cannot be obtained. In contrast, in the case that the thickness of the photocatalyst structure exceeds 5  $\mu\text{m}$ , the linear light transmittance corresponding to the light having the wavelength of 550 nm is less than 50 %. Consequently, sufficient transparency cannot be obtained."

Thirdly in the text of the granted patent, paragraph [0082] (lines 39-53 of column 15) reads as follows:

"Moreover, the condition necessary to obtain a titanium dioxide film, which has a high photocatalytic activity, is that this film contains anatase crystals. When the temperature, at which the film is formed or at which the heat treatment is performed after forming the film, is high, the anatase crystals causes phase transition.



As a result, a part of the anatase crystals are changed into rutile crystals. Therefore, an anatase-type titanium dioxide film containing rutile crystals is preferably used. It is, however, undesired that all of the anatase crystals are changed into rutile crystals at a high temperature. This is because of the fact that in such a case, owing to the phase transition, the titanium dioxide becomes clouded and thus the light transmittance in the visible range is decreased."

- 6.2 These passages tell the skilled reader that the required linear light transmittance of the titanium dioxide film itself of not less than 50% corresponding to light having a wavelength of 550 nm, depends on the thickness of the titanium dioxide thin film, which cannot exceed the value of 5  $\mu\text{m}$ , which the claim requires in any case, and also on the proportion of anatase and rutile phases in the titanium dioxide film.
- 6.3 Whether or not the description of the present patent describes a specific method to determine this parameter is not decisive, since claim 1 as read by a person skilled in the art, with the general knowledge required by the technical field of the invention, should be clear per se without the need to refer to the description. As acknowledged by the parties at the oral proceedings before the Board, this parameter can be determined by directing onto the titanium dioxide film, supported on a transparent substrate, a unidirectional perpendicular light beam with a wavelength of 550 nm and measuring with a light detector the light linearly transmitted through the sample. Since the linear light transmittance of the titanium dioxide film alone should

be measured, it was agreed that the substrate should be measured as a reference in the same manner. Furthermore, a slit should be placed before the light detector in order to only measure the amount of light linearly transmitted and eliminate the part of light scattered by the sample. It was also not controversial, as is illustrated in document (24), that the distance between the sample and the light detector, as well as the size of the slit, centred with the incident beam, indirectly define in such method the maximum deviation angle from the incident light (hereinafter referred to as acceptance angle) up to which the light is considered to be linearly transmitted. The transmitted light which deviates more than that angle will not reach the light detector and will be therefore considered as scattered light.

- 6.4 The Respondents, however, argued that the patent in suit does not define with which acceptance angle the linear light transmittance should be determined, meaning that the accuracy required by the measurement of the linear light transmittance is undetermined. As shown for example in document (24) (page 1 of the translation, second paragraph), the skilled person is well aware of the influence of the acceptance angle on the determination of the linear light transmittance. It is also known as reported in the same document, that transparent samples with high linear light transmittance have almost no dependency on the acceptance angle, while translucent samples with increasing amount of scattered light are significantly dependent thereon. It follows therefore from the above that depending on the kind of material to be tested, either transparent or rather translucent, or in other

words depending on the minimum value of the transmittance required for the samples, the skilled person knows what is the maximum acceptance angle to be selected, so as to minimize any contribution to the measurement from diffusing light transmittance as a result of low angle forward scattering. This means in particular that the conditions imposed on the acceptance angle will be less drastic for the measurement of material having a linear light transmittance of at least 50% than for material having lower values. The linear light transmittance corresponding to light having the wavelength of 550 nm can be determined using a device, such as the Shimadzu UV-3100PC suggested in the description. The precision of measurement obtained with this apparatus can be taken as a degree of precision obtainable in practice.

6.5 Given that the description suggests measuring this property as a convenient measure of transparency in the visible light range, the Board can see no indication that any great precision is called for or that a reader would think that greater precision is required than what can be obtained on the basis suggested in point 6.4 above. In circumstances, such as those of the present case, the fact that a claim requires measurement of a property, here the "linear light transmission", which inevitably cannot be an absolute measurement, does not mean that there is any lack of clarity of the claim in the sense of Article 84 EPC 1973.

7. The decision under appeal concluded, on less evidence than now before the Board, that linear light transmission was not a common parameter, and that

apparently for this reason too the amended claim could not be allowed under Article 84 EPC 1973. The description and claims of the patent are clearly addressed *inter alia* to someone having or able to obtain knowledge and skills in the measurement of optical parameters of materials, and thus able to attribute a meaning to linear light transmission. On the evidence before the Board, this will allow obtaining a measure of the linear light transmission sufficient to be able to assess whether or not the claim requirement is met. For any claim feature involving measurement there may be a grey area where some measurements on a particular sample might appear to show that the claim feature is met, and other measurements might appear to show that the claim feature is not met. The conclusions that can then be drawn depend on where the burden of proof lies. The mere possibility that there might be such a grey area inherent to the method of measurement, however, does not mean that the claim must be considered as unclear in the sense of Article 84 EPC 1973.

- 7.1 The Appellants argued that the skilled person in the absence of any definition of a method in the claim would measure this parameter with a spectrophotometer UV-3100PC manufactured by Shimadzu Co. as indicated in paragraph [0038] of the patent in suit using a standard configuration of that apparatus. Use of this apparatus is not a feature of claim 1. Accordingly, it is open to the respondents when arguing lack of novelty in respect of some item of prior art, to measure the linear light transmittance of this prior art item by any method which someone skilled in the art of measuring the optical properties of materials would regard as giving

a reasonable measure of the linear light transmission, even if the result should not be the same as might be obtained on the spectrophotometer indicated in paragraph [0038] of the patent in suit.

- 7.2 The Respondents II furthermore argued that the measurement of the linear light transmission, as it depends on the distance between the sample and the detector, would also depend on the thickness of the sample. This argument, which was not endorsed by the technical expert of the Respondents I and which is not supported by any evidence, is not deemed to be convincing in view of the small size of the film thickness compared to the distance between the sample and the light detector.
- 7.3 The argument of Respondents I that the light transmittance should be measured on the whole spectrum, as the transparency of the sample varied as a function of the wavelength, is a criticism of the Appellants choice of measure for transparency. Whether or not the criticism is valid, it is not relevant for the question of clarity of the claim 1 in relation to Article 84 EPC 1973.
8. Summing up, it follows from the above, that the replacement in claim 1 as granted of the feature "a light transmittance of at least 50% for light having a wavelength of 550 nm" by "a linear light transmittance of at least 50% for light having a wavelength of 550 nm" does not cause a lack of clarity of the matter for which protection is sought. Claim 1 therefore meets the requirements of Article 84 EPC 1973.

9. The patent was revoked by the Opposition Division on the sole ground that present claim 1 lacked clarity contrary to the requirements of Article 84 EPC 1973. Numerous other issues have yet to be examined and decided on. The Board accordingly deems it appropriate, exercising its discretion under Article 111(1) EPC 1973, to remit the case to the department of first instance for further prosecution.

## **Order**

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of the set of claims 1-6 submitted on 1 February 2005.

The Registrar

The Chairman

C. Moser

S. Perryman