Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 16 September 2024

Case Number: T 0232/23 - 3.3.02

Application Number: 17848415.0

Publication Number: 3511380

IPC: C09D7/40

Language of the proceedings: EN

Title of invention:
PRIMER COMPOSITION AND CURTAIN WALL UNIT

Applicant:
Shin-Etsu Chemical Co., Ltd.
Shin-Etsu Silicone Korea Co., Ltd.

Headword:

Relevant legal provisions:
EPC Art. 123(2)
EPC R. 139
RPBA 2020 Art. 11

Keyword:
Amendments - correction of errors (yes)
Remittal - (yes)

Decisions cited:
G 0011/91

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 0232/23 - 3.3.02

D E C I S I O N
of Technical Board of Appeal 3.3.02
of 16 September 2024

Appellant: (Applicant 1)	Shin-Etsu Chemical Co., Ltd. 6-1, Ohtemachi 2-chome Chiyoda-ku Tokyo 100-0004 (JP)
Appellant: (Applicant 2)	Shin-Etsu Silicone Korea Co., Ltd. 411 Seocho-daero Seocho-gu Seoul 066615 (KR)
Representative:	Mewburn Ellis LLP Aurora Building Counterslip Bristol BS1 6BX (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 11 August 2022 refusing European patent application No. 17848415.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	M. O. Müller
Members:	P. O'Sullivan
	L. Bühler

Summary of Facts and Submissions

I. The appeal of the applicant (hereinafter appellant) lies from the decision of the examining division to refuse European patent application 17 848 415.0.

II. The following documents were cited by the appellant in appeal proceedings:

E1: Appellant's submission before the examining division dated 7 August 2020
E2: Appellant's submission before the examining division dated 21 June 2021
E3: Appellant's submission before the examining division dated 10 January 2022
E4: Communication of the examining division dated 10 February 2021
E5: Communication of the examining division dated 29 June 2021
E6: JP H04-18481 A
E7: US 4,924,016
E8: https://en.wikipedia.org/wiki/Enol
E9: https://www.gelest.com/product/AKT865/

III. In response to the appellant's request to issue a decision according to the state of the file, the examining division issued a decision dated 11 August 2022. As grounds for the decision to refuse the application, the examining division referred to it's communications E4, E5 and a further communication dated 24 January 2022 according to which the application did not meet the requirements of the EPC.

According to communications E4 and E5, the requirements of Article 123(2) EPC were not met in view of the

compound of formula (1) in claim 1. In particular, the alleged error in formula (1) of claim 1 of the application as filed and the proposed correction thereto did not meet the requirements of Rule 139 EPC. Hence, the amendment, i.e. the correction, contravened Article 123(2) EPC. The communication of the examining division dated 24 January 2022 merely restated that the new set of claims submitted on 10 January 2022 (in which the correction was unamended) failed to overcome the objections in relation to Article 123(2) EPC.

IV. Requests

The appellant requested that the decision under appeal be set aside and that the application be remitted to the examining division for further prosecution on the basis of the sole request (main request), namely the set of claims 1 to 7 submitted with the letter dated 10 January 2022, pages 1 to 13 of the description submitted with the letter dated 7 August 2021 and pages 14 to 21 of the description filed with entry into the regional phase before the EPO.

V. For the text of claim 1 of the main request, reference is made to the reasons for the decision, below.

VI. For the submissions of the appellant relevant to the present decision, reference is made to the reasons for the decision set out below.

Reasons for the Decision

Main request

1. Background

The application documents forming the basis for the contested decision are not explicitly provided in the decision itself. The decision however refers to the final communication of the examining division dated 24 January 2021 for the grounds for the decision. According to that communication, the examination was carried out on the basis of the set of claims submitted on 10 January 2022, pages 1-13 of the description filed on 7 August 2020, and pages 14-21 of the description filed with entry into the regional phase before the EPO. Hence, it can be inferred that the contested decision is also based on these documents.

The sole main request in appeal is therefore identical to the sole main request upon which the contested decision is based.

2. Article 123(2) EPC

2.1 Claim 1 of the main request reads as follows:

"*A primer composition effective for improving the adhesion between a substrate selected from organic resins, metals and resin-painted metals and a cured product of a room temperature-curable organopolysiloxane composition, the primer composition comprising:*

(A) 100 parts by weight of organosiloxane polymer of three-dimensional network structure comprising

$R_3SiO_{1/2}$ units and $SiO_{4/2}$ units, a molar ratio of $R_3SiO_{1/2}$ units to $SiO_{4/2}$ units being 0.6 to 1.2, wherein each R independently is a substituted or unsubstituted monovalent hydrocarbon group of 1 to 6 carbon atoms,

(B) 300 to 1,000 parts by weight of titanium compound having the formula (1) or a mixture of organooxy-containing titanium compounds containing at least 75 mol% of titanium compound having the formula (1):

$$Ti(OR^1)_3(R^2CH_2COCH_2COOCH_2R^2)_1 \quad (1)$$

wherein R^1 which may be the same or different are substituted or unsubstituted monovalent hydrocarbon groups, and R^2 which may be the same or different are hydrogen and/or ~~substituted or~~ unsubstituted monovalent hydrocarbon group, and

(C) 1,000 to 8,000 parts by weight of a solvent." (strike through denoting deletion compared to claim 1 of the application as filed)

2.2 There are two amendments to claim 1 of the main request compared to claim 1 of the application as filed, namely:

- The amendment in the formula (1) to replace "CH_2" in the application as filed with "CH" in the centre of the molecule, i.e. the replacement of the formula $Ti(OR^1)_3(R^2CH_2COCH_2COOCH_2R^2)_1$ in claim 1 of the application as filed with the formula $Ti(OR^1)_3(R^2CH_2COCHCOOCH_2R^2)_1$, i.e. with one central hydrogen atom removed, and

- the deletion of "substituted or" from "substituted or unsubstituted monovalent hydrocarbon group" in the definition of the variable R^2.

2.3 The reasons for the contested decision concern only the first of these amendments. For the sake of completeness, there is no reason to doubt that the second amendment fulfils the requirements of Article 123(2) EPC, since it merely amounts to a shrinking of a generically defined group of "substituted or unsubstituted" compounds to a narrower "unsubstituted" group also disclosed in the application as filed.

2.4 In relation to the first amendment, the examining division essentially decided that the amendment did not represent an allowable correction to the application as filed, as the criteria set out in Rule 139 EPC had not been met. Hence, the amendment was not disclosed in the application as filed, and claim 1 of the main request contravened Article 123(2) EPC.

2.5 The board disagrees essentially for the reasons provided by the appellant, as set out in the following.

2.5.1 Rule 139 EPC reads as follows:

"*Linguistic errors, errors of transcription and mistakes in any document filed with the European Patent Office may be corrected on request. However, if the request for such correction concerns the description, claims or drawings, the correction must be obvious in the sense that it is immediately evident that nothing else would have been intended than what is offered as the correction.*"

2.5.2 Corrections under Rule 139 EPC are special cases of an amendment within the meaning of Article 123 EPC and fall under the prohibition of extension laid down in Article 123(2) EPC (e.g. decision of the Enlarged Board of Appeal, G 11/91, reasons, point 1). Hence, the parts of a European patent application relating to the disclosure (description, claims and drawings) can be corrected only within the limits of what the skilled person would derive directly and unambiguously, using common knowledge and seen objectively and relative to the date of filing, from the whole of these documents as originally filed.

2.5.3 It is established case law of the boards of appeal to apply two distinct criteria in determining compliance with Rule 139, second sentence, EPC, namely

(i) it must be obvious that an error is in fact present, the incorrect information being objectively recognisable by the skilled person using common general knowledge (G 11/91, reasons, point 5), and

(ii) the correction of the error must be obvious in the sense that it is immediately evident that nothing else would have been intended than what is offered as the correction (G 11/91, point 6 of the Reasons).

2.5.4 The board agrees with the appellant that the relevant skilled person is a synthetic chemist possessing a common understanding of oxidation state principals in coordination chemistry.

Each of the criteria are addressed in turn in the following.

2.6 Criterion (i): existence of an obvious error

2.6.1 Claim 1 of the application as filed relates to a primer composition comprising *inter alia* component (B). Component (B) is a titanium compound of formula (1) or a mixture of organooxy-containing titanium compounds containing at least 75 mol% of a titanium compound of formula (1).

2.6.2 The preparation of the compound of formula (1) and mixtures thereof is described in paragraphs [0026] to [0038] of the application as filed. Component (B) may be formed by mixing a tetraalkoxytitanium compound $Ti(OR^1)_4$ (B1) with an acetoacetate or acetoacetate ester (B2). In this reaction, one of the four organooxy (OR^1) groups in component B1 exchanges with the acetoacetate to form a "chelate complex" having formula (1) (paragraph [0025]). In paragraph [0027], the compound of formula (1) is described as an organooxy-containing titanium chelate compound having three organooxy groups and one acetoacetate "ligand". The term "acetoacetate chelate" is also employed (e.g. paragraphs [0027] to [0029]).

In the compound $Ti(OR^1)_4$, the titanium atom is in the oxidation state +4; this is required to balance the -1 negative charge on each of the OR^1 moieties. This information would be known to the skilled person, since such metal-ligand complexes are commonplace.

2.6.3 The skilled person looking at the acetoacetate moiety $R^2CH_2COCH_2COOCH_2R^2$ as written in formula (1) of claim 1 of the application as filed would have recognised that

the moiety represents a neutral molecule, i.e. having no positive or negative charge. Hence, if this formula were to be correct, and the three (OR^1) groups in formula (1) must be negatively charged, this would imply that the valence of the titanium atom in formula (1) was +3 and the valence of $R^2CH_2COCH_2COOCH_2R^2$ was zero.

2.6.4 However, in relation to the above scenario, the starting material used according to the application as filed to prepare compound (1) is a tetraalkoxytitanium compound. As stated above, an alkoxy moiety has a negative charge. As a consequence, the presence of four ("tetra") alkoxy moieties in the tetraalkoxytitanium starting material implies that in this material, the titanium must be fourfold positively charged (i.e have an oxidation number of +4). It is repeatedly emphasised in the application as filed that the reaction between the tetraalkoxytitanium compound and acetoacetate is an exchange reaction (paragraphs [0026], [0029] and [0030]). This reaction is commonly known by the skilled person as a ligand exchange reaction, which involves no change in the oxidation state of the metal, but merely involves an exchange of one ligand for another. In such a ligand exchange therefore, the skilled person would know that the oxidation number of the titanium atom remains at +4. As stated by the appellant, this conclusion is further supported by the fact that no oxidation/reduction agent is used in above reaction.

2.6.5 Consequently, it would be immediately evident to the skilled person that the acetoacetate moiety $R^2CH_2COCH_2COOCH_2R^2$ ligand as written out in formula (1) of claim 1 of the application as filed cannot be a neutral moiety but, in order to counterbalance the remaining fourth positive charge of the titanium atom,

must have a negative charge. It would thus be immediately evident that this moiety cannot be correct.

2.6.6 Therefore, the skilled person would objectively and unambiguously recognise the incorrect information using common general knowledge, and criterion (i) is met.

2.7 Criterion (ii): obviousness of the correction

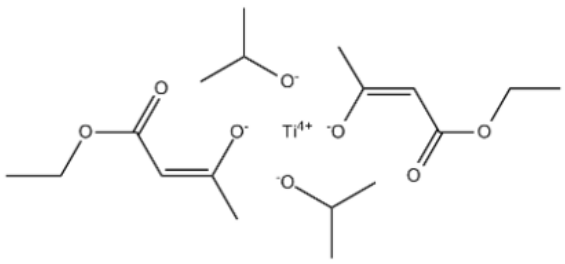
2.7.1 The board also agrees with the appellant that the correction implemented in formula (1) of the main request, namely the deletion of a hydrogen atom in the $R^2CH_2COCH_2COOCH_2R^2$ moiety to form a ligand with a single negative charge in order to balance the remaining positive charge on the titanium atom, would be obvious to the skilled person in the sense that it is immediately evident that nothing else would have been intended than what is offered as the correction.

2.7.2 Specifically, as set out by the appellant, the skilled person would know that in a ligand exchange reaction, the ligand to be exchanged, in the case of example 1 of the application as filed, ethyl acetoacetate, must be deprotonated (i.e. lose H^+) in order to exchange with one of the four organooxy groups OR^1, which in turn dissociates from the central titanium metal and becomes HOR^1, i.e. gains H^+.

2.7.3 In relation to which specific hydrogen atom in molecule $R^2CH_2COCH_2COOCH_2R^2$ would be lost, the knowledge of the skilled person must be taken into account. The references addressed in the following however merely serve as clarification of the knowledge of the skilled person, and are not a prerequisite for the conclusion.

Specifically, the chemical reactivity of different hydrogen atoms in a ligand such as $R^2CH_2COCH_2COOCH_2R^2$ forms part of knowledge of the skilled person as defined above. In particular, the skilled person is aware of the acidity of the various hydrogen atoms in this structure, and would know that, due to keto-enol tautomerism, the hydrogen atoms flanked by two carbonyl groups, i.e. CO-C**H_2**-CO, are the most acidic. This is set out in Wikipedia article E8 submitted by the appellant. Specifically, it is explained therein that the generation of enols involves deprotonation, i.e. removal of a hydrogen atom as a proton H^+ at the α-position to the carbonyl group. When two carbonyls are present, the enol form can even become dominant, as illustrated for 2,4-pentanedione depicted above the table of selected enolisation constants in E8. Hence, these hydrogen atoms are the most acidic, and therefore are the hydrogen atoms in the molecule $R^2CH_2COCH_2COOCH_2R^2$ which would subject to deprotonation.

2.7.4 This understanding is also demonstrated in product brochure E9, submitted by the appellant, which depicts the formula of diisopropylpropoxytitanium bis(ethyl acetaoacetate), exemplified in the application as filed as a component of (B) of claim 1, in addition to the compound of formula (1) and differing therefrom in that it comprises two acetoacetate chelates per titanium atom (see page 12, line 20 and examples 4 to 6). According to E9, this compound is a chelated complex having the following structure:



from which it can be derived that the chelated acetoacetate moieties are negatively charged and in the enol form, i.e. having lost a proton from the $-CH_2-$ moiety flanking the two carbonyl groups.

2.7.5 In the same context, the appellant also submitted *inter alia* patent document E6.

E6 depicts the synthesis of a titanate complex having acetoacetic ester as a ligand obtained by reacting two moles of acetoacetic ester with titanium alkoxide (see page 3, right hand column, reaction labelled (1)). Although this document is in Japanese and the text thereof is not understandable to the board, of particular note is that the acetoacetic ester starting material is depicted as "$CH_3COCH_{\mathbf{2}}COOCH_3$", while when incorporated as a ligand in the product, it becomes "$CH_3COCHCOOCH_3$", i.e. E6 indicates that it is one of the hydrogen atoms in the $-CH_2-$ group flanking the carbonyl groups of the starting material which is removed.

2.8 For these reasons, the correction proposed in claim 1 would be obvious to the skilled person in the sense that it is immediately evident that nothing else would have been intended than what is offered as the correction.

2.9 For the sake of completeness, the board is not aware of any other possible technically sensible way to correct the formula set out in claim 1 of the application as filed, and none were provided by the examining division.

Consequently criterion (ii) is met.

2.10 Complexity

2.10.1 The decision of the examining division that the correction in claim 1 did not meet the requirements of Rule 139 EPC was based partially on the observation that the appellant's explanations were perceived as "very complicated and highly sophisticated, detailed considerations". However, as stated by the appellant, Rule 139 EPC does not place any limits on the complexity or sophistication of the technical understanding of the skilled person. Indeed, such a criterion would render an assessment under Rule 139 EPC a subjective exercise, dependent on the perceived complexity of the issue at hand. Rather, as stated by the appellant, independently of whether a particular concept is complex or not, the relevant question is whether the technical understanding proposed forms part of the knowledge of the skilled person, and whether this understanding leads to the criteria under Rule 139 EPC being met.

2.10.2 In the present case, the concepts concerned form part of the basic common general knowledge of the skilled person in the field of synthetic chemistry, and relate to a basic understanding of oxidation states and the nature of ligand exchange reactions, as well as the basic rules in determining the most acidic hydrogen atoms in carbonyl-containing compounds.

2.10.3 For these reasons, the correction in claim 1 meets the requirements of Rule 139 EPC.

2.10.4 Consequently, the subject-matter of claim 1 of the main request meets the requirements of Article 123(2) EPC.

3. Remittal - Article 11 RPBA

3.1 The appellant requested that the application be remitted to the examining division for further prosecution on the basis of the main request.

3.2 According to Article 11 RPBA, the board shall not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so.

3.3 As stated by the appellant, the contested decision was taken on the basis of Article 123(2) EPC alone, and no decision was taken in relation to novelty or inventive step, nor any further requirements of the EPC.

3.4 Since none of these issues were addressed in the contested decision, they do not form the basis of appeal proceedings pursuant to Article 12(1)(a) or 12(2) RPBA.

3.5 Consequently, in line with the appellant's request, the board decides to remit the case to the examining division 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 examining division for further prosecution.

The Registrar: The Chairman:

U. Bultmann M. O. Müller

Decision electronically authenticated