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**Datasheet for the decision
of 28 January 2019**

Case Number: T 0041/18 - 3.3.03

Application Number: 06802760.6

Publication Number: 1943282

IPC: C08G18/10, C08G18/12,
C08G18/48, C08G18/22

Language of the proceedings: EN

Title of invention:

PREPARATION OF AMINO-SILANE TERMINATED POLYMER BY USING
ORGANIC BISMUTH CATALYST AND CURED POLYMER THEREFROM BY USING
NON-TIN CATALYST

Applicant:

Momentive Performance Materials Inc.

Relevant legal provisions:

EPC Art. 111(1), 123(2)

Keyword:

Amendments - allowable (yes)
Remittal to the department of first instance - (yes)



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Case Number: T 0041/18 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 28 January 2019

Appellant: Momentive Performance Materials Inc.
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 4 October 2017
refusing European patent application No.
06802760.6 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman D. Semino
Members: M. C. Gordon
C. Brandt

Summary of Facts and Submissions

- I. The appeal of the applicant lies from the decision of the examination division refusing European patent application number 06802760.6 on the grounds of Article 123(2) EPC.

Claims 1 and 22 of the application as filed read as follows:

"1. A process for making moisture curable silylated polyurethane resin comprising reacting isocyanato-terminated polyurethane prepolymer derived from polyether polyol with an aminoalkoxysilane in the presence of at least one urethane reaction-promoting catalyst selected from the group consisting of bismuth and zinc compounds.

22. A moisture-curable composition comprising a silylated isocyanato-terminated polyurethane prepolymer and at least one curing catalyst selected from the group consisting of bismuth, aluminium, titanium and zinc compounds."

- II. The decision of the examining division was based on three sets of claims forming a main request and two auxiliary requests, all filed on 18 August 2017.

Claim 1 of the main request read as follows:

"A process for making a moisture-curable composition comprising a moisture curable silylated polyurethane resin, the process comprising

- (i) reacting polyether polyol with molar excess of polyisocyanate in the presence of at least one urethane reaction-promoting

- catalyst to obtain an isocyanato-terminated polyurethane prepolymer;
- (ii) reacting the isocyanato-terminated polyurethane prepolymer obtained in step (i) with an aminoalkyl alkoxy silane in the presence of the at least one urethane reaction-promoting catalyst to obtain the moisture curable silylated polyurethane resin; and
 - (iii) adding to the moisture curable silylated polyurethane resin obtained in step (i) at least one curing catalyst which is an aluminium compound;

wherein the polyether polyol used in step (i) contains up to 1000 ppm water;

wherein the urethane reaction-promoting catalyst is selected from the group consisting of bismuth and zinc compounds and after step (i) remains in the isocyanato-terminated polyurethane prepolymer to catalyze the reaction of the prepolymer with the aminoalkyl alkoxy silane; and

wherein the reaction of the isocyanate-terminated polyurethane prepolymer and aminoalkoxysilane in step (ii) is carried out in the absence of a tin-containing compound."

According to the decision, claim 1 of the main request did not meet the requirements of Article 123(2) EPC due to the presence of feature (iii). Claims 21 and 22 (see above for wording of claim 22) did not refer back to any other claim and did not mention any of the process steps of operative claim 1. Whilst these claims might imply that one of the identified compounds had been

introduced to the moisture-curable composition, they did not provide a basis for the step of adding an aluminium compound to the composition of step (ii) nor did the original description provide a basis. Whilst it was acknowledged that addition of the curing catalyst had to take place at a certain point of the process, there was no clear, unambiguous and direct disclosure of such addition in the application, reference being made in particular to page 2, paragraphs 3 and 4. The decision furthermore identified a two-step selection, namely the selection of the addition of a curing catalyst and a second step relating to the selection of an aluminium compound, thus also confirming the unallowability of the amendment. The examples were all much more specific than the claim and only a single example related to an aluminium catalyst. Thus the claim was considered to represent an intermediate generalisation.

The same conclusion applied to the two auxiliary requests.

Consequently the application was refused.

- III. The applicant (appellant) filed an appeal against the decision, maintaining the requests as considered in the proceedings before the examining division. Grant of a patent on the basis of the set of claims according to the main request was required. In any other case, oral proceedings were requested.
- IV. Following a communication from the Board, in which *inter alia* the intention to restrict consideration in appeal proceedings to the requirements of Article 123(2) EPC was indicated, the appellant provided more information relating to the basis in the application as

originally filed for the amendments made and refiled the three requests unamended with a letter of 22 August 2018.

V. Following a further communication of the Board, the appellant amended its requests in terms of the procedural aspects, no longer pursuing a request for grant of a patent.

VI. The arguments of the appellant can be summarised as follows:

A moisture-curable composition was disclosed in claim 22 of the application as filed which was distinct from the composition produced according to claim 1. Although claim 22 did not formally depend on claim 1, it was nevertheless disclosed in the application (page 8, paragraph 3) that the moisture curable compositions contained the product of the process of claim 1. The application was explicitly directed to the provision - i.e. a method for the production of - such curable compositions.

Regarding the nature of the catalyst, the application distinguished two types with different functions. One was employed in the preparation of the initial prepolymer and one was employed for curing the final product, which catalyst could either be of the same type as employed in the first stage, or in the alternative could be aluminium or titanium compounds. If it were intended that a different catalyst were to be used for the final curing, then inevitably this would have to be added to the prepolymer in order to provide the final curable composition. Thus the step of addition of a catalyst was a clear and unambiguous consequence of what was explicitly disclosed in the

application.

Furthermore, as set out in the application (page 7, paragraph 3 and page 8, paragraph 1), the amount of curing catalyst required was higher than that of the catalyst for the first stage meaning that even if the same type of catalyst were to be employed for both steps, inevitably it would be necessary to add an extra amount of the catalyst for the final curing.

All examples of the application prepared the final composition by adding curing agent to the previously prepared prepolymer.

Claim 22 of the application provided a list of four types of curing catalysts. The selection of aluminium was thus a selection from a single list which was not contestable under Article 123(2) EPC.

- VII. The appellant requests that the decision under appeal be set aside and that the case be remitted to the first instance for further prosecution on the basis of the main request filed with the letter of 22 August 2018.

Reasons for the Decision

1. Article 123(2) EPC
 - 1.1 The examining division found that all amendments to claim 1 of the main request apart from the addition of step (iii) were not objectionable under Article 123(2) EPC. The Board has no reason to diverge with that part

of the decision.

- 1.2 Therefore the only matter to be addressed under Article 123(2) EPC is the allowability of the amendment represented by feature (iii) of claim 1.

In the claims as originally filed claim 1 is directed to a process for making moisture-curable silylated polyurethane resin. This same subject-matter is disclosed at page 2, second paragraph of the application as filed.

Claims 21 and 22 disclose a moisture-curable silylated isocyanate-terminated polyurethane composition which contains at least one curing catalyst (see recitation of claim 22, above).

This subject-matter is also presented at page 2, third and fourth paragraph of the application.

The following part of the description, continuing to the end of page 7 addresses aspects of the process of claim 1.

In the first paragraph of page 8 it is reported that the same catalysts as used for the preparation of the polymer can be employed for curing. The amount of catalyst is reported based on the prepared resin. However the amount of catalyst - 0.01 to 2.0 parts per 100 parts of the silylated polyurethane resin - is different to that reported for the preparation of the initial resin (0.0005 to 1.0 parts by weight based on 100 parts by weight of the polyol - see page 7, third paragraph and claim 13).

Accordingly it can be agreed with the appellant that

the curing of the resin obtained by the process of claim 1 is disclosed in the application and that - due to the differing amounts - this requires addition of catalyst, even in the case that the same catalyst is used as in the initial stage of the process.

This is done in the examples, confirming that this is part of the overall process disclosed.

Thus the application discloses unambiguously, albeit implicitly, as part of the process the addition of curing agent to the product of the process of claim 1 as originally filed.

Regarding the nature of the catalyst for the final curing both the description (page 2, third and fourth paragraph) as well as claims 21 and 22 disclose as one possibility an aluminium compound.

Since the addition of a catalyst for curing - in general - is disclosed as a mandatory part of the overall process for the production of the composition, the restriction to aluminium is a single selection which, as argued by the appellant, does not give rise to objections pursuant to Article 123(2) EPC.

- 1.3 Consequently the Board comes to the conclusion that the amendment represented by step (iii) of operative claim 1 is disclosed in the application as originally filed and does not constitute added subject-matter.

This conclusion applies also in the context of its combination with the other features of the claim, since these relate to different and distinct stages of the process, i.e. in that the final curing is a step that is disclosed independently of the various "upstream"

process aspects represented by those amendments not considered objectionable by the examining division.

2. Remittal

Since the examining division in the decision under appeal only addressed the matter of Article 123(2) EPC, the Board considers it appropriate, pursuant to Article 111(1) EPC, to remit the case 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 department of first instance for further prosecution on the basis of the main request - claims 1-12 - filed with the letter of 22 August 2018.

The Registrar:

The Chairman:



B. ter Heijden

D. Semino

Decision electronically authenticated