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**Datasheet for the decision  
of 28 January 2014**

**Case Number:** T 2138/10 - 3.3.03  
**Application Number:** 02021858.2  
**Publication Number:** 1302491  
**IPC:** C08G18/00, C08G18/06,  
C08G18/10, C08G18/66, B32B17/00  
**Language of the proceedings:** EN

**Title of invention:**  
Light stable one-shot urethane-urea elastomers

**Patent Proprietor:**  
BAYER CORPORATION

**Opponents:**  
PPG Industries Ohio, Inc.  
BAE Systems Simula, Inc.

**Headword:**

**Relevant legal provisions:**  
EPC Art. 123(2), 114(2)

**Keyword:**  
Amendments - added subject-matter (yes) (Main request)  
Late-filed auxiliary requests - request clearly allowable (no)  
(first-third auxiliary requests)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
Boards of Appeal  
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Case Number: T 2138/10 - 3.3.03

**D E C I S I O N  
of Technical Board of Appeal 3.3.03  
of 28 January 2014**

**Appellant:** PPG Industries Ohio, Inc.  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
9 August 2010 concerning maintenance of the  
European Patent No. 1302491 in amended form.**

**Composition of the Board:**

**Chairwoman:** B. ter Laan  
**Members:** M. C. Gordon  
C. Vallet

## Summary of Facts and Submissions

I. The appeal lies from the interlocutory decision of the opposition division announced on 13 July 2010 and posted on 9 August 2010 according to which it was held that European patent number 1 302 491 (based on European patent application number 02 021 858.2) could be maintained in amended form on the basis of the main request, filed at the oral proceedings held before the opposition division.

II. The application as originally filed contained 30 claims, whereby claim 1 read as follows:

"1. A process for the production of an optically clear, light-stable polyurethane-urea elastomer having an onset softening point of at least 130°C, comprising reacting:

A) a liquid polyisocyanate or polyisocyanate prepolymer having an NCO group content of about 5 to about 50%, an average functionality of 2 to 3, a viscosity of less than 5,000 mPa.s at 25°C, and comprising the reaction product of:

(1) from 20 to 100% by weight, based on 100% by weight of A), of a (cyclo)aliphatic polyisocyanate having an NCO group content of about 32% to about 50% by weight and a functionality of about 2, wherein said (cyclo)aliphatic polyisocyanate is selected from the group consisting of 4,4'-dicyclohexylmethane diisocyanate (rMDI), 1,6-hexamethylene diisocyanate (HDI), isophorone diisocyanate

(IPDI), 1,4-cyclohexane diisocyanate (CHDI), m-tetramethylxylene diisocyanate (m-TMXDI), and mixtures thereof;

and

(2) from 0 to 80% by weight, based on 100% by weight of A), of at least one organic compound having at least two hydroxyl groups, and a molecular weight of from about 62 to about 8,000;

and

B) an isocyanate-reactive component comprising:

1) from 3% to 90% by weight, based on 100% by weight of component B), of at least one organic compound containing at least two aromatic amine groups, and having a molecular weight of 100 to 1,000;

and

2) from 10% to 97% by weight, based on 100% by weight of component B), of at least one organic compound having at least two hydroxyl groups and a molecular weight of about 62 to 6,000;

in the presence of

C) at least one organometallic catalyst;

wherein the components are casted in a mold at an isocyanate index of 95 to 120."

Claim 2 was dependent on claim 1 and read as follows:

"2. The process of Claim 1, wherein the components are processed at a temperature of about 40°C or less."

Claim 30 was an independent claim and read as follows:

30. The optically clear, light-stable polyurethane-urea elastomer produced by the process of Claim 1."

III. The patent was granted with a set of 22 claims, whereby claims 1, 2 and 22 read as follows (additions are indicated by the Board in **bold** and deletions as ~~strikethrough~~, both as compared to claim 1 of the application as originally filed):

"1. A process for the production of an ~~optically clear~~ light-stable polyurethane-urea elastomer **with a luminous transmittance of greater than 85%** having an onset softening point of at least 130°C, comprising reacting:

A) a liquid polyisocyanate or polyisocyanate prepolymer having an NCO group content of ~~about~~ 5 to ~~about~~ 50%, an average functionality of 2 to 3, a viscosity of less than 5,000 mPa.s at 25°C, and comprising the reaction product of:

(1) from 20 to 100% by weight, based on 100% by weight of A), of a (cyclo)aliphatic polyisocyanate having an NCO group content of ~~about~~ 32% to ~~about~~ 50% by weight and a functionality of about 2, wherein said (cyclo)aliphatic polyisocyanate is selected from the group consisting of 4,4'-dicyclohexylmethane diisocyanate (rMDI), 1,6-hexamethylene diisocyanate (HDI), isophorone diisocyanate (IPDI), 1,4-cyclohexane diisocyanate (CHDI), m-tetramethylxylene diisocyanate (m-TMXDI), and mixtures thereof;  
and

(2) from 0 to 80% by weight, based on 100% by weight of A), of at least one organic compound having at least two hydroxyl groups, and a molecular weight of from ~~about~~ 62 to ~~about~~ 8,000;

and

B) an isocyanate-reactive component comprising:

1) from 3% to 90% by weight, based on 100% by weight of component B), of at least one organic compound containing at least two aromatic amine groups, and having a molecular weight of 100 to 1,000:

and

2) from 10% to 97% by weight, based on 100% by weight of component B) of at least one organic compound having at least two hydroxyl groups and a molecular weight of about 62 to 6,000;

in the presence of

C) at least one organometallic catalyst;

wherein the components are casted in a mold at an isocyanate index of 95 to 120.

2. The process of Claim 1, wherein the components are processed at a temperature of ~~about~~ 40°C or less.

22. The ~~optically clear~~, light-stable polyurethane-urea elastomer produced by the process of Claim 1."

IV. Two notices of opposition against the patent were filed on respectively 24 September 2008 (opponent 1) and 15 October 2008 (opponent 2) in which revocation of the



patent on the grounds of Art. 100(a) EPC for lack of novelty (Art. 54 EPC - opponent 1) and lack of inventive step (Art. 56 EPC - both opponents) was requested.

V. The decision of the opposition division was based on an amended set of nineteen claims filed as main request during the oral proceedings before the opposition division. Claim 1 read as follows (additions are indicated by the Board in **bold** and deletions as ~~strikethrough~~, both as compared to claim 1 of the application as originally filed):

"1. A process for the production of an ~~optically clear~~ light-stable polyurethane-urea elastomer **with a luminous transmittance of greater than 85%** having an onset softening point of at least 130°C, comprising reacting:

A) a liquid polyisocyanate or polyisocyanate prepolymer having an NCO group content of ~~about~~ 5 to ~~about~~ 50%, an average functionality of 2 to 3, a viscosity of less than 5,000 mPa.s at 25°C, and comprising the reaction product of:

(1) from 20 to 100% by weight, based on 100% by weight of A), of a (cyclo)aliphatic polyisocyanate having an NCO group content of ~~about~~ 32% to ~~about~~ 50% by weight and a functionality of about 2, wherein said (cyclo)aliphatic polyisocyanate is selected from the group consisting of 4,4'-dicyclohexylmethane diisocyanate (rMDI), 1,6-hexamethylene diisocyanate (HDI), isophorone diisocyanate (IPDI), 1,4-cyclohexane diisocyanate (CHDI), m-

tetramethylxylene diisocyanate (m-TMXDI), and mixtures thereof;

and

(2) from 0 to 80% by weight, based on 100% by weight of A), of at least one organic compound having at least two hydroxyl groups, and a molecular weight of from ~~about~~ 62 to ~~about~~ 8,000;

and

B) an isocyanate-reactive component comprising:

1) from 3% to 90% by weight, based on 100% by weight of component B), of at least one organic compound containing at least two **exclusively aromatically bound primary** amine groups, and having a molecular weight of 100 to 1,000:

and

2) from 10% to 97% by weight, based on 100% by weight of component B) of at least one organic compound having at least two hydroxyl groups and a molecular weight of about 62 to 6,000;

in the presence of

C) at least one organometallic catalyst;

wherein the components are **processed at a temperature of 40°C or less, and are** casted in a mold at an isocyanate index of 95 to 120."

VI. According to the decision, *inter alia*, the main request fulfilled the requirements of Art. 123(2) EPC. In that regard, the subject-matter of claim 1 was considered to be based on the combination of claims 1 and 2 as originally filed together with the passage on page 13,

- lines 14-15 of the application as originally filed.
- VII. On 15 October 2010 opponent 1 (appellant) lodged an appeal against the decision, the prescribed fee being paid on the same date.
- VIII. Together with the statement setting out the grounds of the appeal, filed on 17 December 2010, the appellant maintained objections pursuant to Art. 54 EPC and Art. 56 EPC. Further arguments were provided with a letter of 12 September 2011.
- IX. The patent proprietor - now the respondent - replied to the appeal by letter of 30 June 2011.
- X. On 6 August 2013 the Board issued a summons to attend oral proceedings.
- XI. In a communication dated 11 October 2013 the Board set out its preliminary assessment of the case. It was in particular considered that the amendments made by the way features from originally filed claim 2 had been inserted into originally filed claim 1 resulted in the introduction of subject-matter extending beyond the content of the application as originally filed, contrary to Art. 123(2) EPC.
- XII. By letter of 28 November 2013 the respondent announced that it would not attend the oral proceedings before the Board. Three sets of claims forming first, second and third auxiliary requests were submitted. Compared to claim 1 of the main request, each of claims 1 of the first, second and third auxiliary request contained further details regarding component C).

XIII. Oral proceedings were held before the Board on 28 January 2014, attended only by the appellant.

XIV. The arguments of the appellant relevant for the present decision can be summarised as follows:

The appellant concurred with the provisional opinion of the Board in respect of Art. 123(2) EPC, observing that the independence of processing temperature and casting temperature as defined in the operative claim was not disclosed in the application as originally filed.

The first to third auxiliary requests suffered from the same defect as the main request and hence could not overcome the deficiency identified by the Board. As these requests were late filed and not *prima facie* clearly allowable, they should not be admitted to the procedure.

XV. In the letter dated 30 June 2011 (page 2, second full paragraph) the respondent, having regard to novelty over D3 (US-A-5 510 445), relied in particular on the processing vs. the moulding temperature: "Consequently, the expression "*processed at a temperature of 40°C or less*" like stated in claim 1 corresponds to the temperature in the mold."

In its submission of 28 November 2013 the respondent did not provide any substantiated arguments in writing regarding the objections raised by the Board according to which the requirements of Art. 123(2) EPC would not be met. Also, no arguments were given why the auxiliary requests would fulfil the requirements of the EPC, in particular Art. 123(2) EPC.

- XVI. The appellant (opponent 1) requested that the decision under appeal be set aside and that European patent No. 1 302 491 be revoked in its entirety.
- XVII. The respondent requested in writing to dismiss the appeal. In the alternative it was requested to maintain the patent in amended form on the basis of one of the sets of claims according to the first to third auxiliary requests as submitted with letter of 28 November 2013.
- XVIII. Opponent 2 did not make any submissions during the appeal proceedings.

### **Reasons for the Decision**

1. The appeal is admissible.

#### *Main request*

2. Art. 123(2) EPC
  - 2.1 Claim 1 is derived from the disclosure of claim 1 as originally filed. The feature of luminous transmittance of greater than 85% is disclosed at page 20 lines 19-25 of the application as originally filed. The features relating to the amine are disclosed at page 13 lines 14 and 15 of the application as originally filed.

As noted in the communication of the Board, the final part of the claim has been modified by insertion of the features of originally filed (dependent) claim 2 and

reads as follows: "wherein the components **are processed at a temperature of 40°C or less**, and are casted in a mold at an isocyanate index of 95 to 120" (features of originally filed claim 2 in **bold**).

2.2 The effect of this modification is to impose a differentiation between the processing and the moulding of the components, the temperature being restricted for the processing but not for the moulding. However there is no basis in the original application for such a modification.

Original claim 2 referred to "the process of Claim 1", thus indicating the whole process, not only a part of it. This is confirmed by the passage on page 19, lines 24 to 29 of the original application, according to which "The temperature at which the polyurethane-urea elastomers of the invention are prepared is generally not critical and the mold temperature can be at ambient temperatures. Ambient temperature is defined for the purposes of the present invention as temperature from about 15 to about 30°C. The processing temperatures are usually less than 40°C." In that passage no difference is made between the steps of processing and moulding in general. In particular there is no indication of any differentiation to be made regarding the temperatures to be used for processing on the one hand and moulding on the other. This lack of differentiation between the conditions for processing and moulding is consistent with the disclosure of page 4, lines 7 to 9, cited by the respondent as paragraph [0009] of the patent.

By introducing different temperature ranges for processing and moulding, the modification of the claim results in the introduction of subject-matter extending beyond the content of the application as originally

- filed, contrary to Art. 123(2) EPC.
- 2.3 The respondent did not advance any arguments with respect to this objection, which had been identified in the communication of the Board.
- 2.4 The respondent in its submissions with respect to novelty over D3 seems in particular to rely on the temperature (letter dated 30 June 2011), i.e. considers the temperature of the mould to be a limiting technical feature. However the present wording of claim 1, since it imposes no restriction on the mould temperature, appears to contradict, or at least be inconsistent with the respondent's argument that "the expression "processed temperature of 40°C or less" like stated in claim 1 corresponds to the temperature in the mold." (letter dated 30 June 2011, page 2, second full paragraph).
- 2.5 In view of the above the main request does not meet the requirements of Art. 123(2) EPC and is refused.

#### *Auxiliary requests*

### 3. Admissibility

- 3.1 The first, second and third auxiliary requests were filed with the letter of the Respondent of 28 November 2013, i.e. after the summons to oral proceedings.

In this letter the respondent not only failed to address the objection pursuant to Art. 123(2) EPC regarding the main request raised by the Board in its communication but furthermore advanced no reasons why

any of the auxiliary requests would fulfil the requirements of the EPC, in particular Art. 123(2) EPC.

- 3.2 The question of admission of late filed requests to the appeal procedure is a matter for the discretion of the Board. In particular this depends on whether the submitted requests are clearly allowable.

Claim 1 of each of the auxiliary requests retains the wording of claim 1 of the main request that gave rise to an - unchallenged - objection pursuant to Art. 123(2).

Under these circumstances it has to be concluded that the auxiliary requests are not clearly allowable.

The first, second and third auxiliary requests therefore are not admitted to the procedure.



**Order**

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

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



E. Goergmaier

B. ter Laan

Decision electronically authenticated