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**Datasheet for the decision  
of 4 December 2018**

**Case Number:** T 0727/15 - 3.3.03

**Application Number:** 06782344.3

**Publication Number:** 1923415

**IPC:** G02B1/04, C08G18/75, C08G18/38,  
C08G18/48

**Language of the proceedings:** EN

**Title of invention:**  
POLYURETHANE/THIOURETHANE-BASED OPTICAL RESIN AND PROCESS FOR  
PRODUCING THE SAME

**Patent Proprietor:**  
Mitsui Chemicals, Inc.

**Opponent:**  
PPG Industries Ohio, Inc.

**Relevant legal provisions:**  
EPC Art. 54, 123(2)  
RPBA Art. 13(3)

**Keyword:**

Main request - reversion to claims as granted after  
maintenance in more restricted form - admissible - (yes)  
Novelty - main request (no)  
Amendments - added subject-matter (yes)- Auxiliary requests  
1-3  
Late-filed auxiliary request - admitted (no) - adjournment of  
oral proceedings would have been required - Auxiliary request  
4

**Decisions cited:**

T 0386/04



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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Case Number: T 0727/15 - 3.3.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.03**  
**of 4 December 2018**

**Appellant:** Mitsui Chemicals, Inc.  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
3 February 2015 concerning maintenance of the  
European Patent No. 1923415 in amended form.**

**Composition of the Board:**

**Chairman** D. Semino  
**Members:** M. C. Gordon  
W. Ungler

## Summary of Facts and Submissions

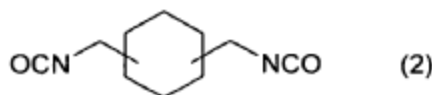
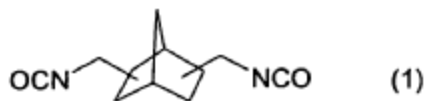
I. The appeals of the patent proprietor and the opponent lie against the interlocutory decision of the opposition division posted on 3 February 2015 concerning maintenance of European Patent number 1 923 415 in amended form.

II. The patent was granted with a set of 12 claims whereby claim 1 read as follows:

1. A process for producing a polyurethane/thiourethane-based resin by polymerizing a composition comprising a polyisocyanate component,

(B) at least one polythiol compound optionally having at least one (poly)sulphide bond in the molecule; and  
(C) at least one polyol compound having at least one ether bond and two or more hydroxy groups in the molecule;  
wherein the polyisocyanate content of said composition consists of the following component (A): at least one

polyisocyanate compound selected from the group consisting of an alicyclic isocyanate compound represented by the following Formula (1) or Formula (2):



hexamethylene diisocyanate, and dicyclohexylmethane diisocyanate.

III. A notice of opposition against the patent was filed in which revocation on the grounds of Article 100(a) EPC (lack of novelty, lack of inventive step) was requested.

The following document, *inter alia*, was cited in support of the opposition:

D4: GB-A-1 475 115.

IV. The decision was based on a main request and two auxiliary requests, all filed during the oral proceedings before the opposition division.

In particular claim 1 of auxiliary request 2 on the basis of which it was held that the patent could be maintained, read as follows:

"A process for producing an optical component comprising a polyurethane/thiourethane-based resin, the polyurethane/thiourethane-based resin being produced by polymerizing a composition comprising a polyisocyanate component,

(B) at least one polythiol compound optionally having at least one (poly)sulphide bond in the molecule, and  
(C) at least one polyol compound having at least one ether bond and two or more hydroxy groups in the molecule

wherein the polyisocyanate content of said composition consists of the following component (A): at least one polyisocyanate compound selected from the group consisting of hexamethylene diisocyanate and dicyclohexylmethane diisocyanate."

In the decision it was *inter alia* found that the subject-matter of claim 1 of auxiliary request 2 was novel over document D4 which was silent about optical elements, but was directed to a composition for treating woollen fibres.

With regard to Article 123(2) EPC in respect of the claim being directed to a process for producing an optical component, the opposition division held that a

basis was provided by original claim 9. It is not necessary for the purposes of the present decision to enter into a detailed discussion of the further findings of the opposition division.

- V. Both parties lodged appeals against the decision, and duly responded to the statement of grounds of appeal of the opposing party.

In its statement of grounds of appeal the appellant/patent proprietor submitted requests consisting of claims sets as follows:

Main request: claims of the patent as granted;

Auxiliary request 1: Claim 1 was directed to a process for producing an optical component comprising a polyurethane/thiourethane-based resin produced by the process otherwise as defined in claim 1 of the main request.

Auxiliary requests 2 and 3: these were likewise directed to a process for producing an optical component. The further wording of these requests is not relevant for the present decision.

- VI. The Board issued a summons to oral proceedings and a communication. In particular the issue of novelty with respect to D4 was addressed. Furthermore doubts were expressed with respect to the allowability pursuant to Article 123(2) EPC of the auxiliary requests.
- VII. Both parties made subsequent written submissions, referring *inter alia* to the question of novelty with respect to D4.

VIII. Oral proceedings were held before the Board on 4 December 2018.

During the course of the oral proceedings and after the result of the deliberation of the Board on all requests on file had been announced the appellant/patent proprietor submitted a further set of claims as auxiliary request 4 which was directed to an optical component.

The preamble of claim 1 thereof read as follows:

"An optical component comprising a polyurethane/  
thiourethane-based resin, the polyurethane/  
thiourethane-based resin produced by a process by  
polymerizing a composition comprising a polyisocyanate  
component,  
(B) [remainder as for the main request]".

IX. The arguments of the appellant/patent proprietor insofar as relevant to this decision can be summarised as follows:

(a) Main request - admittance

It was permissible - and expressly endorsed - by the case law (T 386/04) for a patent proprietor to revert to the claims of the patent as granted following revocation even if a more narrowly formulated set of claims had been pursued as main request in proceedings before the opposition division.

(b) Main request - novelty

D4 was from an unrelated field, namely wood treatment. Multiple selections from a plurality of lists were required to arrive from D4 at the subject-matter claimed. There was in particular no disclosure therein of the use in combination of a polyol and a polyisocyanate as claimed.

Regarding the polyisocyanate component, operative claim 1 defined a selection of those listed in D4.

Regarding the polyols, operative claim 1 required that these had free OH groups. Although D4 did specify polyetherpolyols, it was not disclosed that these mandatorily had terminal hydroxy groups, but in contrast the polyethers could be terminated with epoxy groups.

Furthermore D4 related exclusively to production of an emulsion, not a resin. Emulsions and resins were different, in particular a resin was mandatorily a solid. The prepolymer formed in D4 was never referred to as a resin and was not a solid - the corresponding arguments of the appellant/opponent were therefore without merit. D4 emphasised the need to avoid high viscosity. To this end, presence of a solvent/diluent was mandatory.

In view of this novelty should be acknowledged.

(c) Auxiliary request 1 - Article 123(2) EOC

The general teaching of the application gave an implicit basis for the disclosure of a process for producing optical components from the resin



composition. This disclosure was provided by original claims 8 and 9, and the entire description. Similarly the examples when read in the context of the generality of the whole application provided a basis for the amended claims.

(d) Auxiliary requests 2 and 3

The same arguments applied as for auxiliary request 1.

(e) Auxiliary request 4 - submitted during oral proceedings - admittance

The original decision had found in favour of the patent proprietor with respect to the wording of auxiliary request 1. The developments in the oral proceedings before the Board had not been expected. The amended auxiliary request 4 emphasised the product, as had the granted claims. There was no material change in the subject-matter compared to those requests submitted in writing which would necessitate a modification of the argumentation provided by the appellant/opponent. Further there was no indication to be taken from the communication of the Board that there might be any problem with the present formulation of the claims.

X. The arguments of the appellant/opponent can be summarised as follows:

(a) Main request - admittance and remittal

The claims as granted had not been pursued past the

initial stage of the opposition procedure. To resubmit these on appeal constituted an abuse of procedure and furthermore deprived the opponent of the right to a decision by two instances on this matter. For these reasons the request should not be admitted or, if admitted, the case should be remitted to the opposition division.

(b) Main request - novelty

D4 disclosed a process for preparing a resin from the components as specified in operative claim 1. The product formed in the initial stages and which was then subjected to emulsification was clearly a resin. There was nothing in the patent which limited the resin to a solid as argued by the patent proprietor. Hence the liquid polymer of D4 fell within the ambit of the claims.

D4 identified the polyalkylene ether polyols, in particular polypropylene di- and triols as particularly preferred, not only in the description but also in the claims. In particular organic polyols with two OH groups were disclosed. It was not possible to interpret this statement as relating to epoxy terminated polyethers. Similarly, an explicit, individualised disclosure of the polyisocyanates was provided. There was an overlap with the list of isocyanates defined in the patent. Since the polyetherpolyol component was explicitly disclosed in D4 only a single selection - of the specific polyisocyanate - was required to arrive at subject-matter within the scope of claim 1, which single selection would not confer novelty.

(c) Auxiliary request 1 - Article 123(2) EPC

There was no disclosure of a process as defined in claim 1 beyond that of the working examples which however were far more specific than the claimed process. Original claim 9, relating to the optical elements, could not provide a basis as it was directed to a product not a process.

(d) Auxiliary requests 2 and 3 - Article 123(2) EPC

The same arguments as for auxiliary request 1 applied.

(e) Auxiliary request 4 - admittance

The arguments on lack of compliance with the requirements of Article 123(2) EPC leading to the refusal at the oral proceedings of auxiliary requests 1-3 had been provided in writing. The provisional opinion of the Board similarly addressed this. Thus the appellant/patent proprietor had had the opportunity to react prior to the oral proceedings to the eventuality that these requests might not be allowed. The presentation of auxiliary request 4 constituted a late change of case and potentially required a different line of reasoning. It was not possible to deal with this request within the scope of the oral proceedings. The request should therefore not be admitted.

XI. The appellant (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or, in the alternative, on the basis of one of auxiliary requests 1, 2 or 3, all as filed with the statement of grounds of appeal, or on the basis of auxiliary request 4 filed during the oral proceedings of 4 December 2018.

The appellant (opponent) requested that the appeal of the patent proprietor be dismissed. In particular it was requested that the main request not be admitted into the proceedings or, if it was admitted, that the case be remitted to the opposition division. In addition it was requested that the decision under appeal be set aside and the patent be revoked. Furthermore it was requested that auxiliary request 4 not be admitted into the proceedings.

## **Reasons for the Decision**

1. Main request

1.1 Admittance

As explained in decision T 386/04 of 9 January 2007, section 1 of the reasons, in particular the part bridging pages 13 and 14, neither the EPC nor the case law contains provisions prohibiting a patent proprietor from reverting to a broader claim, e.g. the claims as granted, even though its main request before the opposition division had only been for maintenance of the patent in more restricted form. The exception to this is where to allow the proprietor to revert to the granted claims could amount to an abuse of procedure (see Headnote).

It is apparent that during the opposition procedure the patent proprietor initially pursued rejection of the opposition, but modified this position upon receipt of the communication of the opposition division. Hence the claims of the patent as granted formed part of the considerations in the opposition procedure beyond the stage of filing the notice of opposition.

The Board also notes that the only difference in substance between the claims of the patent as granted and those of the main request decided upon by the opposition division apart from a disclaimer was the restriction of the process to being for the production of an optical component (main request filed during the oral proceedings on 15 October 2014) rather than to the production of the composition itself (patent as granted).

It is furthermore noted that the claims according to all requests limited to the process for producing an optical component have been attacked by the opponent under the provisions of Article 123(2) EPC in view of the amendment corresponding to that difference, and the reversion on appeal to the claims of the patent as granted can be seen as an amendment directed to addressing this objection.

The Board thus can identify no grounds for considering that in the context of the present case that such reversion constitutes an abuse of procedure (contrary to the position taken in the letter of appellant/opponent of 9 September 2015, page 2, 3rd paragraph).

On that basis, the Board decides to admit the main request into the proceedings.

Regarding the request for remittal based on the argument that a decision of the Board on the present main request would deprive the opponent of the right to have a decision by two instances, it is established case law that there is no absolute right to have an issue decided upon by two instances (see "Case Law of the Boards of Appeal of the European Patent Office", 8th edition (2016), section IV.E.7.6.1). Moreover the issues under dispute (in particular novelty over document D4) had already been decided upon by the opposition division for a more limited version of the claims.

In view of this the Board decides not to remit the case to the opposition division at the present stage of the proceedings.

#### 1.2 Novelty - D4

D4 relates to the application of polyurethane emulsions to wool (title, claim 1). According to the passage bridging pages 1 and 2 and claim 2 the polyurethane is the reaction product of:

- an organic polyol, or mixture of polyols having at least two hydroxyl groups;
- an organic polysulphide having at least two thiol groups and
- a diisocyanate.

Operative claim 1 is directed to a process for producing a product, independent of any intended use. Hence the contention of the patent proprietor that D4 and the patent relate to different technical fields is correct, but of no consequence insofar as novelty of the product of claim 1 is being considered.

According to D4, page 2, lines 87-97, the process for preparation of the emulsion is not critical, however it is required that at the time of emulsification the prepolymer be essentially formed.

Regarding the isocyanate component, D4 discloses at page 2, lines 68 and 69 that this can be *inter alia* hexamethylene diisocyanate and dicyclohexane methane diisocyanate, both of which are specified in the operative claim.

Regarding the polythiol compound, D4 discloses that this contains at least one disulphide or polysulphide linkage and at least two terminal thiol groups (page 2, lines 30-34). This component falls within the scope of feature (B) of claim 1.

Regarding the definition of the polyol functional compound D4 (page 2, lines 3-9 and claim 2) discloses that the polyol has at least two hydroxyl groups and an equivalent weight of 1000-3000. Page 2, line 15-21 specifies that the polyol is preferably a polyalkylene ether polyol, in particular, polypropylene oxide triol. The appellant/patent proprietor has contended that D4 would also disclose that the polyetherpolyols could in fact be epoxy-terminated, thus presumably not having free OH groups. The basis for this position is D4, page 2, lines 24-26 according to which the polypropylene oxide triols may contain small amounts of terminal ethylene oxide or be tipped with ethylene oxide. The Board considers that the terminology "triol" precludes that the terminal groups remain in the form of ring-closed, epoxide structure. Rather the only interpretation of this statement consistent with the term "triol" and the reaction is that the terminal groups are free hydroxy groups which are derived from

the ring-opening of previously introduced epoxy structures.

Accordingly the three classes and, insofar as the isocyanate compounds are concerned, specific embodiments of monomers as required by operative claim 1 are disclosed in combination in D4 to the extent that only a single selection - in respect of the isocyanate compounds - is required.

This has the consequence that the chemical constitution of the claimed product (resin) does not provide a distinction with respect to the disclosure of D4.

It remains to assess whether the term "resin", as employed in the operative claim, provides a distinction compared to the disclosure of D4.

"Resin" is understood in the relevant technical field as denoting some kind of polymer, without imposing any restriction in terms of the physical state - solid or liquid - thereof. No evidence of the contrary or of a different accepted meaning has been provided. Consequently, the contention of the patent proprietor that the use of the term "resin" mandatorily indicates some kind of solid product, thus providing a distinction over the prepolymer - of unspecified physical state - or emulsions of D4 cannot be concurred with.

D4 refers at page 1, lines 84 to 86 to "an emulsion containing a polyurethane polymer". At page 2, lines 87, 92 and 98 reference is made to a "prepolymer" which is prepared prior to emulsification. Similarly according to D4, example 1 the prepolymer was prepared in a first step and then combined with an aqueous



solution to provide the emulsion.

Consequently D4 discloses the reaction product of the three components - the prepolymer - as an entity which is distinct from the emulsion. This prepolymer falls within the scope of the term "resin" as employed in claim 1 as explained above.

The conclusion is therefore that D4 provides a disclosure of the process for the preparation of a product as defined in operative claim 1, with the consequence that this subject-matter lacks novelty contrary to the requirements of Article 54 EPC.

2. First auxiliary request - Article 123(2) EPC

Claim 1 differs from claim 1 of the main request by specifying that the process is directed to production of an optical component.

Claim 9 of the application as filed is directed to an optical component comprising the resin of claim 8, i.e. that produced by the process of claim 1 of the application.

Claims 8 and 9 however relate to a product but not to a process, hence these cannot provide a basis for the subject-matter of the operative (process) claim 1.

Nor is there any generic basis in the description for such a process. Paragraph 12 of the application as filed relates to provision of an optical resin, but not to the provision of an optical component. Paragraphs 54 and 55 of the application relate to a known moulding process whereby paragraph 55 relates to the production of lenses "usually obtained by casting polymerisation".

Paragraph 126, relating to the examples, states that the materials so obtained are suitable for use as spectacle lenses.

None of these passages however relates to a process in the generality as defined in operative claim 1. Either specific types of optical components are indicated (lenses), or a specific type of moulding technique is referred to (casting) or the discussion of formation of spectacle lenses is in the context of specific compositions (paragraph 126).

The argument of the patent proprietor that the application provides an implicit disclosure of the process as claimed is thus seen to be incorrect since, as explained above, there is no sufficiently generic disclosure in the application as filed. On the contrary, all the passages invoked include one or more restrictions which are not present in the operative claim.

Auxiliary request 1 therefore does not meet the requirements of Article 123(2) EPC.

3. Auxiliary requests 2 and 3 - Article 123(2) EPC

No further arguments regarding the objection under Article 123(2) EPC as indicated by the Board for auxiliary request 1 were provided by the parties for auxiliary requests 2 and 3.

Therefore the same arguments and conclusions apply as for auxiliary request 1.

4. Auxiliary request 4 - admittance

Auxiliary request 4 was submitted during the oral proceedings before the Board after the result of the deliberation of the Board on the previous requests had been announced.

Claim 1 is directed to an optical component. All method claims have been deleted.

This was the first time in the entire procedure in which that was the case. Throughout the opposition and appeal procedures the claims had been directed to the process, whereby insofar as products were defined these were in the form effectively of product-by-process claims referring to the process claim 1.

There had been no indication previous to the oral proceedings that such claims might be submitted.

The issues which had resulted in the higher ranked requests being refused had been previously dealt with by the parties and indicated in the communication of the Board. Hence it is not the case that matters arose for the first time at the oral proceedings which could not have been foreseen. On that basis there is no justification for allowing a reaction to these matters findings at this stage of the procedure.

The newly filed claims represent a departure from the case *bis dato*. The ramifications of this change on the outcome of the case cannot be readily assimilated and assessed. In particular the Board and the opposing party would be required to re-evaluate to what extent the previously raised objections still apply and whether further objections arise from the new

formulation of claim 1.

The Board therefore considers that dealing with this request would be contrary to the principle of procedural economy and would not have been possible without adjournment of the oral proceedings.

Thus it is appropriate for the Board to exercise the discretion allowed pursuant to Article 13(1) and (3) RPBA to not admit auxiliary request 4 to the proceedings.

## 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:



G. Rauh

D. Semino

Decision electronically authenticated