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**Datasheet for the decision
of 11 June 2015**

Case Number: T 1489/12 - 3.3.03

Application Number: 04753154.6

Publication Number: 1631608

IPC: C08G18/12, C08G18/62,
C08G18/40, C09J175/04

Language of the proceedings: EN

Title of invention:

MOISTURE CURING REACTIVE POLYURETHANE HOT MELT ADHESIVES
MODIFIED WITH ACRYLIC POLYMERS

Patent Proprietor:

Henkel AG & Co. KGaA

Opponent:

Klebchemie M.G. Becker GmbH & Co. KG

Relevant legal provisions:

EPC Art. 123(2)

Keyword:

Amendments - added subject-matter (no)



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Case Number: T 1489/12 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 11 June 2015

Appellant:
(Patent Proprietor)

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted on 18 May 2012
revoking European patent No. 1631608 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman B. ter Laan
Members: D. Marquis
R. Cramer

Summary of Facts and Submissions

I. The appeal by the patent proprietor lies from the decision of the opposition division with date of 18 May 2012 revoking European patent N° 1 631 608 (based on application number 04 753 154.6).

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

"1. A moisture curable polyurethane hot melt adhesive composition prepared by reacting:

a) a polyisocyanate;

b) a polyol;

c) a high molecular weight acrylic polymer having a weight average molecular weight of 80,000 to 250,000 g per mole; and

d) a low molecular weight acrylic polymer having a weight average molecular weight of 5,000 to 60,000 g per mole."

Claims 2 to 12 were directed to preferred embodiments of claim 1.

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

IV. By a decision announced orally on 25 April 2012, the opposition division revoked the patent. The decision was based on the claims as granted as the main request and on two auxiliary requests. It was held that the main request (claims as granted) contained subject matter that extended beyond the application as filed.

Claim 1 as granted required that the four components indicated in the claim react with each other. The application as filed did not provide a basis for such a reaction in order to form a polyurethane hot melt adhesive. Furthermore, claim 1 as granted resulted from the selection of a large number of different passages in the original disclosure which moreover were partially contradictory to one another. There was no basis for those amendments either.

Claim 1 of the first auxiliary request was found to contravene the requirements of Article 123(3) EPC and claim 1 of the second auxiliary request did not comply with Article 123(2) EPC.

- V. On 25 June 2012, the patent proprietor (appellant) lodged an appeal against the decision of the opposition division and paid the prescribed appeal fee on the same day. The statement setting out the grounds of the appeal was filed on 27 August 2012. The patent proprietor requested that the decision of the opposition division be set aside and that the opposition be rejected.
- VI. On 9 January 2013, the opponent (respondent) filed a reply to the statement of the grounds of appeal. The opponent requested that the appeal be dismissed.
- VII. During the oral proceedings, held on 11 June 2015, after discussion of the main request, the appellant filed a new request named "auxiliary request 6", which was to be its sole request. That request contained 8 claims which corresponded to the set of claims as granted from which however claims 6 and 10 to 12 were deleted.

VIII. The appellant's arguments may be summarised as follows:

- Article 123(2) EPC

Claim 1 of the main request had a basis in the claims and description as originally filed, which disclosed the preparation of a hot melt adhesive composition that was a polyurethane prepolymer obtained from polyisocyanate and polyol. The combination of low and high molecular weight acrylic polymers was disclosed on pages 4 and 5. Their molecular weight ranges were also disclosed in the description. Claim 1 pertained to a composition formulated as a product-by-process. The description disclosed a number of embodiments showing how to prepare that composition. Claim 1 as granted satisfied the requirements of Article 123(2) EPC.

IX. The respondent's arguments may be summarised as follows:

- Article 123(2) EPC

The description as originally filed was limited to a polyurethane prepolymer not mentioned in present claim 1. The description did not disclose a composition worded as the product-by-process now claimed. The original disclosure was limited to a reaction of a mixture of polyols and an isocyanate at a temperature in a specific range not mentioned in present claim 1. The description did not disclose the reaction between a single polyol and a polyisocyanate as claimed. Also, the claimed combination of the molecular weights of acrylic polymers resulted from an arbitrary selection of ranges for which selection there was no support in the description. The disclosure of a mixture of the acrylic polymers was limited to specific ratios not

mentioned in claim 1. The examples could not be used as a support because they were more specific than the wording used in claim 1.

Neither the claims nor the description as originally filed disclosed a reaction between the four components a) to d) as claimed. Claim 1 of the main request contravened the requirements of Article 123(2) EPC.

- X. The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the sixth auxiliary request filed before the Board during the oral proceedings.

- XI. The respondent requested that the appeal be dismissed or alternatively that the case be remitted to the department of first instance for further prosecution.

Reasons for the Decision

- 1. The appeal is admissible.

Auxiliary request 6 as filed during oral proceedings

- 2. Admissibility of auxiliary request 6 as the sole new main request
 - 2.1 Auxiliary request 6 was filed during the oral proceedings before the Board. The claims of this request correspond to the claims of the patent as granted from which claims 6 and 10 to 12 were deleted and the claims 7 to 9 renumbered in accordance. The admissibility of that request into the proceedings was not contested by the respondent. Since the claims of the present request are identical to those of the

patent as granted as pursued before the Board and do not raise issues which the Board or the other party could not deal at the oral proceedings, exercising its discretion under Article 13(1) RPBA, the Board admits auxiliary request 6 as the sole new main request into the proceedings.

3. Article 123(2) EPC

3.1 Claim 1 of auxiliary request 6 is directed to a moisture curable polyurethane hot melt adhesive composition. It was not disputed by the parties that the claims as originally filed did not provide a basis for claim 1 as they pertained to a composition based on an isocyanate and an acrylic polymer that was not required to be moisture curable. Therefore, claim 1 can only be allowed if a basis can be found in the description as originally filed.

3.2 "Moisture curable, hot melt polyurethane adhesives" are disclosed in the third paragraph of page 4 of the original description. That passage indicates that these adhesives "may be prepared through the reaction of a mixture of polyols with an isocyanate-containing compound at a typical temperature from about 100°C to 130°C.". That wording does not require the adhesives to be produced by any particular process nor within any specific temperature range. Also, no basis can be found in the description for supposing that the moisture curable hot melt polyurethane adhesives of the patent in suit are characterized by the general preparation process mentioned on page 4. It was further not disputed that polyurethane adhesives produced from polyols and isocyanates generally form compositions of polymeric reaction products. The description as

originally filed therefore discloses moisture curable, hot melt polyurethane adhesive compositions.

3.3 The second paragraph of page 1 of the description as originally filed discloses that a moisture curable polyurethane adhesive is an adhesive consisting of isocyanate terminated polyurethane prepolymers that reacts with surface or ambient moisture in order to chain-extend, forming a new polyurethane polymer. That is consistent with the definition given in the first and second full paragraphs of page 12 stating that the polyurethane prepolymers after application are extended to form polyurethane polymers in solid form. Even if the terminology used to describe the same isocyanate terminated polyurethane prepolymer somewhat varies throughout the description, referring alternatively to an "isocyanate terminated urethane prepolymer" (page 7, third paragraph), an "isocyanate terminated prepolymer" (page 7, first and fourth paragraph), an "urethane prepolymer" (page 7, third and fifth paragraph) or simply a "prepolymer" (page 8, last paragraph), all those instances refer to the same composition which forms the reactive curing hot melt adhesive (page 7, third paragraph) and which is a moisture curable polyurethane or isocyanate terminated polyurethane prepolymer.

3.4 The composition of claim 1 is formulated as a product-by-process claim. The four components a) to d) from which that composition can be prepared however only define the composition in so far as their reaction results in features characteristic of the claimed composition.

3.4.1 The last paragraph of original page 8 discloses that the prepolymer is prepared by the polymerization of a

polyisocyanate (corresponding to a) in claim 1) with a polyol (corresponding to b) in claim 1). The original description further discloses that adhesives with improved properties can be prepared using high molecular weight acrylic polymers (page 4, second paragraph), which polymers have a molecular weight in the range of 60.000 to about 250.000 g/mole (page 4, fifth paragraph). The passage bridging pages 4 and 5 adds that a preferred embodiment includes a mixture of high and low molecular weight acrylic polymers, the low molecular weight polymer having a molecular weight of about 5.000 to about 60.000 g/mole (page 5, second full paragraph).

The mixture of acrylic polymers, referred to as "the polymers" in the passage starting on page 7 is therefore disclosed as being composed of a high molecular weight acrylic polymer having a molecular weight of 60.000 to 250.000 g/mole and a low molecular weight acrylic polymer having a molecular weight of 5.000 to 60.000 g/mole. Paragraph 5 of original page 4 mentions that a preferred range for the high molecular weight acrylic polymer is 80.000 - 180.000 g/mole. It can be derived from that passage that protection was sought for a high molecular weight acrylic polymer having a molecular weight of 80.000 to 250.000 g/mole. The description as filed therefore forms a basis for the presence of a high molecular weight acrylic polymer having a molecular weight of 80.000 to 250.000 g/mole and a low molecular weight acrylic polymer having a molecular weight of 5.000 to 60.000 g/mole.

3.5 Since claim 1 is formulated as a product-by-process claim, it pertains to the moisture curable polyurethane hot melt adhesive composition as such. The composition is structurally defined by the presence of an

isocyanate terminated polyurethane (see point 2.3 above) and high and low molecular weight acrylic polymers (see point 2.4.1 above).

3.5.1 Claim 1 does not define the process parameters of the reaction nor the steps in which the four components a) to d) are made to react so as to prepare the claimed moisture curable polyurethane hot melt adhesive composition. The description discloses several ways of preparing the moisture curable polyurethane hot melt adhesive composition by reacting components a) to d) (page 7). One way is to blend the polymers c) and d) with the polyol b) prior to reaction thereof with the isocyanate a). An alternative is to add the polymers c) and d) directly to the isocyanate terminated prepolymer obtained from the reaction of a) and b). Also, the polymers c) and d) may be obtained from the corresponding acrylic monomers by free-radical polymerisation in the presence of b) before reaction with a) or in the presence of the product of a) with b) before reaction of the mixture containing a) to d). The products of those preparations all fall under the scope of claim 1 since the claim is not limited to any specific method of preparation.

3.6 In view of the above, the description as originally filed provides sufficient basis for the moisture curable polyurethane hot melt adhesive composition of present claim 1. The same is true for the dependent claims against which no objection under Article 123(2) EPC had been raised and regarding which the Board sees no reason to take a different view. Auxiliary request 6 submitted during oral proceedings before the Board therefore satisfies the requirements of Article 123(2) EPC.

3.7 Since the opposition division has not given any decision on the grounds of opposition raised by the opponent in the notice of opposition other than the ground under Article 100(c) EPC, the Board finds it appropriate, in these circumstances, not to investigate the substantive questions of patentability of the main request but, in order to give the parties the opportunity to have those questions considered by two instances, to exercise its power under Article 111(1) EPC and to remit the case to the opposition division for further prosecution.

Order

For these reasons it is decided that:

1. The decision of the opposition division is set aside.
2. The case is remitted to the department of first instance for further prosecution on the basis of auxiliary request 6 filed during the oral proceedings.

The Registrar:

On behalf of the Chairman

(according to Art. 8(3) RPBA):



B. ter Heijden

R. Cramer

Decision electronically authenticated