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**Datasheet for the decision
of 17 July 2019**

Case Number: T 2552/17 - 3.3.03

Application Number: 06788492.4

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IPC: C08L5/00, C08L3/00, C03C25/32

Language of the proceedings: EN

Title of invention:
BINDERS AND MATERIALS MADE THEREWITH

Applicant:
Knauf Insulation GmbH

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
Amendments - allowable (no)



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
Fax +49 (0)89 2399-4465

Case Number: T 2552/17 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 17 July 2019

Appellant: Knauf Insulation GmbH
(Applicant) One Knauf Drive
Shelbyville, IN 46176-1496 (US)

Representative: ARC-IP
ARC-IP sprl
Rue Emile Francqui 4
1435 Mont-Saint-Guibert (BE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 26 June 2017
refusing European patent application No.
06788492.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman M. C. Gordon
Members: D. Marquis
W. Ungler

Summary of Facts and Submissions

- I. The appeal of the applicant lies against the decision of the examining division dated 26 June 2017 to refuse the application number 06 788 492.4 on the grounds that the main request filed on 8 June 2016, and in particular its claims 1, 2, 3, 5 and 12, did not find a basis in the application as originally filed (Article 123(2) EPC).
- II. The application as filed contained 34 claims, claim 1 read as follows:
- "1. A binder, comprising:
Maillard reactants including (i) an amine and (ii) a carbohydrate, wherein the binder is (i) uncured and (ii) formaldehyde free".
- III. The applicant lodged an appeal against that decision and requested that the decision be set aside and a patent be granted on the basis of a main request submitted with the statement setting out the grounds of appeal.
- IV. On 16 April 2019 the Board issued a summons to attend oral proceedings, scheduled for 17 July 2019. A communication indicating the preliminary opinion of the Board was issued on 6 May 2019.
- V. On 26 June 2019, the appellant filed a new main request as well as first to third auxiliary requests.

Claim 1 of the main request read as follows:

"1. A method of manufacturing fiberglass comprising contacting fibers with a thermally-curable aqueous

binder comprising an aqueous solution of Maillard reactants including (i) an ammonium salt of one or more polycarboxylic acid reactants and (ii) one or more carbohydrate reactants having reducing sugar wherein the ratio of the number of moles of the polycarboxylic acid reactants to the number of moles of the carbohydrate reactants is in the range from 1:4 to 1:15".

Claim 1 of the first auxiliary request differed from claim 1 of the main request in that the method of manufacturing fiberglass was additionally defined by the following sentence "and wherein the pH of the aqueous solution prior to placing it in contact with the fibers to be bound can be greater than or equal to 7".

Claim 1 of the second auxiliary request differed from claim 1 of the main request in that the method of manufacturing fiberglass was additionally defined by the following sentence "and wherein the binder is used to bind glass fibers together such that they become organized into a fiberglass mat which is processed to form fiberglass insulation".

Claim 1 of the third auxiliary request differed from claim 1 of the main request in that the mole ratio of the reactant was amended to the value of 1:6.

- VI. Oral proceedings were held before the Board on 17 July 2019.

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

- (a) The method for manufacturing fiberglass defined in operative claim 1 found a basis in the passages of page 5 and 21 of the application as filed. In particular, page 5 disclosed the reactants (i) and (ii) making up the binder used in the claimed method. Considering the invention disclosed in the application as a whole, the skilled reader would have seriously contemplated the range defining the ratio of reactants that is disclosed on page 21 as being an essential feature of the method.
- (b) It was also clear from the application as a whole that less weight had to be given to the limitation of the pH of the aqueous binder even though that feature was disclosed alongside the ratio of reactants on page 21. It was also apparent that the other features disclosed as being optional in the aqueous binder throughout the application as filed were not essential to the definition of the subject matter of operative claim 1.
- (c) The examples of the application confirmed that the claimed combination of features was preferred. In particular, Table 1 showed aqueous binders comprising reactants (i) and (ii) in a wide molar ratio corresponding to the range of operative claim 1.
- (d) Claim 1 of the main request therefore met the requirements of Article 123(2) EPC.
- (e) The same arguments essentially applied to all auxiliary requests. Since the range defining the pH of the solution was defined in claim 1 of the first auxiliary request, the objection based on the disclosure of page 21 was moot. Claim 1 of the

first auxiliary request or either of the second and third auxiliary requests met the requirements of Article 123(2) EPC.

VIII. The appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the main request, or on the basis of any of auxiliary requests 1 to 3, all filed with letter dated 26 June 2019.

Reasons for the Decision

Main request

1. Article 123(2) EPC

1.1 For the assessment of Article 123(2) EPC, the question to be answered is whether the subject-matter of an amended claim extends beyond the content of the application as filed, i.e. whether after the amendment the skilled person is presented with new technical information (see G 2/10, OJ EPO 2012, 376, point 4.5.1 of the Reasons and Case Law of the Boards of Appeal of the EPO, 8th edition, 2016, II.E.1 and 1.2.1).

1.2 In the case of multiple amendments being made, as is the case here, the question has to be posed whether the specific combination of features now being defined in operative claim 1 emerges clearly and unambiguously from the application as filed, whereby the description is not to be viewed as a reservoir from which features pertaining to separate embodiments can be freely combined in order to artificially create a certain embodiment (Case Law, supra, II.E.1.4.1).

1.3 With respect to claim 1 of the main request, the question that had to be answered was whether the method of manufacturing fiberglass as defined by the combination of features of operative claim 1, namely the combination of contacting fibers with an aqueous solution of the Maillard reactants (i) and (ii) in a mole ratio of 1:4 to 1:15, emerged clearly and unambiguously from the application as filed.

1.4 The applicant gave as a basis for operative claim 1 the passages of the description on pages 5 and 21. The passage on page 5, lines 13-18 concerns one of the embodiments of the invention which is generally directed to a method for manufacturing products from a collection of non, or loosely assembled, matter. It is disclosed that that method can be used in the fabrication of fiberglass (line 15) but the essential aspects of the method are not identified in the passage of page 5. Rather, the features of the method relating to its steps or its reactants are only described in terms ("may" or "can") showing that these features are independent of each other and are non-mandatory. Thus, the passage on page 5 discloses:

- (a) that the method **may** include contacting the fibers with a thermally-curable, aqueous binder,
- (b) that the binder **may** include (i) an ammonium salt of a polycarboxylic acid reactant and (ii) a reducing-sugar carbohydrate reactant,
- (c) that the method **can further** include removing water from the binder in contact with the fibers

(Board's emphasis).

1.5 There is no indication in that passage that any of these features are essential to the method of

manufacturing fiberglass or even that any of these features could be seen as being preferred over others. On the contrary, the wording is such that the features listed above can only be understood to be alternatives on the same level of preference with regard to the definition of the method.

1.6 It follows that it cannot be derived from the passage on page 5 that the first two features (a) and (b) which are part of the definition of claim 1 were essential or preferred features of the method of manufacturing fiberglass. There is thus no basis for the definition of operative claim 1 with any combination of features (a), (b) or (c). Furthermore, the passage on page 5 does not mention the mole ratio of reactants (i) and (ii) which is an essential feature of the method according to operative claim 1. It can thus not be concluded that the combination of specific features defining operative claim 1 emerges clearly and unambiguously from the passage of page 5 of the application as filed.

1.7 The passage on page 21, lines 1-8 does not concern a method of manufacturing fiberglass per se, but relates to the aqueous solution of Maillard reactants (i) and (ii) which is an essential feature of operative claim 1. Two features of the aqueous solution of Maillard reactants are addressed in this passage, the pH of the solution and the mole ratio of reactants (i) and (ii) (emphasis added):

- "The pH of this solution prior to placing it in contact with the material to be bound **can** be greater than or equal to about 7".
- "The ratio of the number of moles of the polycarboxylic acid reactant(s) to the number of moles of the carbohydrate reactant(s) **can** be in the

range from about 1:4 to about 1:15".

Each of these features is defined in terms indicating that it is non-mandatory for the definition of the aqueous solution of Maillard reactants. Furthermore, the similar language used for both features does not show that the limitation of the mole ratio of reactants (i) and (ii) is preferred over the limitation of the pH of the aqueous solution.

1.8 It follows that there is no basis in the passage of page 21 for selecting the limitation relative to the mole ratio of reactants (i) and (ii) and not the limitation of the pH of the aqueous solution to define the aqueous solution of Maillard reactants in the method of manufacturing fiberglass. Also, since the mole ratio of reactants (i) and (ii) is described as a non-mandatory feature of the aqueous solution of Maillard reactants on page 21, it is to be placed on the same level of preference as any other non-mandatory feature of the method disclosed on page 5. There is however no pointer in the application as filed showing that the combination of features (a) and (b) of page 5 with the mole ratio of reactants (i) and (ii) of page 21 are essential features of the method for manufacturing fiberglass while the feature (c) and the pH of the aqueous solution are not. It can thus not be concluded that the specific combination of features defining operative claim 1 emerges clearly and unambiguously from the passages of pages 5 and 21 of the application as filed.

1.9 In addition to the passages on page 5 and 21, the application as filed contains further instances describing the use of other components in the aqueous solution of Maillard reactants, such as a non-

carbohydrate polyhydroxy reactant (page 19, line 9 and page 20, line 30) or a silicon coupling agent (page 23, line 20), that are on the same level of preference as the features disclosed on pages 5 and 21. There is also for these components no indication in the application as filed showing why these components are less relevant to the definition of the method according to operative claim 1 than the features (a) and (b) of page 5 and the mole ratio of reactants (i) and (ii) of page 21. The appellant cited the examples of the application as filed as a pointer showing that the features present in claim 1 were essential features of the method of manufacturing fiberglass. Examples 3ff describing the preparation of a fiberglass of the application as filed however do not establish that the features of operative claim 1 were the only essential features of the method. On the contrary, all these examples, show that the aqueous solution of Maillard reactants contains a silane coupling agent and the pH is adjusted to the range of 8-9, which are features of the description that are on the same level of preference as the features of claim 1 but which are not part of that claim. If anything, the examples of the application as filed show that the pH of the aqueous solution of Maillard reactants and the use of a silicon coupling agent are essential features of the method according to operative claim 1.

- 1.10 The Board concludes from the above that the combination of features of operative claim 1 does not emerge clearly and unambiguously from the application as filed. Also, the subject matter of operative claim 1 constitutes new technical information since it is nowhere disclosed in the application as filed that the specific combination of features constituted necessary and sufficient conditions for the method of

manufacturing fiberglass as disclosed on page 5. Claim 1 of the main request does therefore not meet the requirements of Article 123(2) EPC.

Auxiliary requests

2. Claim 1 of the first request corresponds to claim 1 of the main request with the addition of the definition of the pH of the aqueous solution of Maillard reactants. While the limitation regarding the pH is disclosed on page 21 of the application as filed, its addition to claim 1 does not address the objections noted under 1.4-1.6 and 1.9 above because the application as filed does not contain a pointer towards this new combination of specific features selected from all other features disclosed in the description. Claim 1 of the first auxiliary request does not meet the requirements of Article 123(2) EPC.
3. Claim 1 of the second auxiliary request corresponds to claim 1 of the main request with the addition that the binder is used to bind glass fibers together such that they become organized into a fiberglass mat which is processed to form fiberglass insulation. That amendment of claim 1 concerns the definition of the arrangement of glass fibers in the method. It does not address the objections raised for the main request which remain valid for the second auxiliary request. Claim 1 of the second auxiliary request does not meet the requirements of Article 123(2) EPC.
4. Claim 1 of the third auxiliary request differs from claim 1 of the main request in that the mole ratio of the reactants (i) and (ii) is amended to the value of 1:6. The amendment in claim 1 of the third auxiliary request merely limits the definition of one the

features defining the method but does not address the lack of basis in the application as filed for the combination of specific features defining the method of manufacturing fiberglass. The objections raised for the main request also apply to the third auxiliary request. Claim 1 of the third auxiliary request does not meet the requirements of Article 123(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



B. ter Heijden

M. C. Gordon

Decision electronically authenticated