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Datasheet for the decision of 8 December 2011

Case Number: T 0003/09 - 3.3.08

Application Number: 98959225.8

Publication Number: 1042338

IPC: C07H 15/04, C07H 1/06

Language of the proceedings: EN

Title of invention:
Process for preparing pale-colored and transparent alkyl glycosides

Patentee:
LG Chemical Limited

Opponent:
BASF Personal Care and Nutrition GmbH

Headword:
Alkylglycosides/LG

Relevant legal provisions:
EPC Art. 56
RPBA Art. 13(1)

Keyword:
"Admissibility of a document filed in the course of the appeal proceedings (no)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0003/09 **-** 3.3.08

D E C I S I O N
of the Technical Board of Appeal 3.3.08
of 8 December 2011

Appellant: (Opponent)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 6 November 2008 rejecting the opposition filed against European patent No. 1042338 pursuant to Article 101(2) EPC.

Composition of the Board:

Chairman: M. Wieser
Members: T. J. H. Mennessier
J. Geschwind

Summary of Facts and Submissions

I. The opponent (appellant) lodged an appeal against the decision of the opposition division dated 6 November 2008, whereby the opposition filed against the European Patent No. 1 042 338 was rejected under the provisions of Article 101(2) EPC.

II. The patent with the title "*Process for preparing pale-colored and transparent alkyl glycosides*" was granted on European application No. 98 959 225.8, which was filed as an international application under the PCT on 20 November 1998, published as WO 99/26957.

III. The set of claims as granted consisted of 13 claims.

Claim 1 read:

"1. A process for preparing pale-colored and transparent alkylglycosides comprising the steps of:

a) reacting a glucose and a high fatty alcohol of having 8 to 22 carbon atoms in the presence of an acid catalyst until the amount of unreacted glucose in the reaction product reaches less than 3 % of the reactants' weight;

b) neutralizing the reaction product having a water content of less than 1000 ppm by means of adding alkali metal oxide powders having a specific surface area of more than 30 m^2/g in an amount of from 0.5 mole to 1.0 mole, based on the acid catalyst used, on a molar basis."

Claims 2 to 13 were dependent on claim 1 and directed to particular embodiments thereof.

IV. The patent was opposed under Article 100(a) EPC on the grounds of lack of novelty (Article 54 EPC) and lack of inventive step (Article 56 EPC).

V. The statement of grounds of appeal was filed on 27 February 2009. The only ground relied on by the appellant was lack of inventive step (Article 56 EPC). As an auxiliary measure, oral proceedings were requested.

VI. In reply to the statement of grounds, the respondent (patent proprietor) filed submissions and requested oral proceedings on an auxiliary basis.

VII. On 18 February 2010, the appellant filed further submissions together with patent application WO 96/41917, a new document to be referred to in the proceedings as document E11.

VIII. Under cover of a letter dated 26 July 2010 containing additional submissions, the respondent filed six auxiliary requests.

IX. In a letter dated 21 December 2010, the appellant contended that neither the claims as granted (main request) nor the auxiliary requests met the requirements of Article 56 EPC.

X. On 4 July 2011, a communication under Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA)

containing the preliminary and non-binding opinion of the Board was sent to the parties.

XI. On 2 November 2011, in reply to the Board's communication, the respondent filed three new auxiliary requests to replace all the previous auxiliary requests.

XII. Oral proceedings took place on 8 December 2011. They were attended by both parties.

XIII. The following documents are referred to in the present decision:

(E1) WO 93/08203 (published on 29 April 1993)

(E5) Information sheets (a to e) from LuV (Lehmann & Voss & Co.), published between September 1989 (E5e) and January 1992 (E5b)

(E9) Catalogue of 'Lehmann & Voss & Co.', published in 1989, introductory pages and pages 11 to 33

(E11) WO 96/41917 (published on 27 December 1996)

XIV. The submissions made by the appellant, insofar as they are relevant to the present decision, may be summarised as follows:

Admissibility of document E11 in the proceedings

Document E11 had been filed late in the proceedings because it had not been easy for the opponent to retrieve it.

Nevertheless, document E11 should be admitted in the proceedings because it was highly relevant. Indeed, document E11 described a process for peroxide bleaching of paper pulp, i.e. a paste of cellulose which as a polymer of β-(1-4) linked D-glucose units (cellubiose units) structurally resembled alkylglycosides. In this process the magnesium oxide reacted with H_2O_2 in a very similar way compared to the alkali metal oxide reacting with the acid catalyst in the claimed process.

Main request (claims as granted)

Document E1 which described a process for the production of light-coloured alkyl oligoglycoside pastes represented the closest state of the art for the assessment of inventive step. The objective technical problem to be solved was seen as the provision of a process for preparing light-coloured alkylglycosides with an improved colour quality (see page 2 of the appellant's letter of 21 December 2010).

The only difference between the process of document E1, as run in its Example 1, and the one according to an embodiment of claim 1 was the use in the latter of an alkali metal oxide (such as a magnesium oxide) powder having a specific surface area of more than 30 m^2/g.

The skilled person would have arrived at the subject-matter of claim 1 by using a magnesium oxide described in document E5e, having a iodine adsorption of 180 mg J/g, which according to document E9 corresponds to a specific surface area of 180 m^2/g, in the process of Example 1 of document E1. By doing so he would have succeeded to produce pale-coloured and

transparent alkylglycosides as in the patent in suit. This was due to the fact that such magnesium oxide allowed an accelerated neutralisation of the acid catalyst. Thereby, the technical problem was solved by the obvious combination of the teachings of documents E1 and E5e which required nothing else than routine experimentation.

XV. The submissions made by the respondent, insofar as they are relevant to the present decision, may be summarised as follows:

Admissibility of document E11 in the proceedings

Document E11 should not be admitted into the proceedings. Not only had it been filed very late but it was also prima facie technically irrelevant.

Indeed, document E11 was concerned with the production of paper from cellulose, a polysaccharide which had not the structure of an alkylglycoside. It showed that completely opaque and white paper could be obtained by using magnesium oxide. Thus, document E11 in this respect even taught away from the claimed process of the patent at issue which aimed at obtaining a pale-coloured and transparent solution of alkylglycosides.

Main request (claims as granted)

For the assessment of inventive step, document E1 represented the closest prior art. The technical problem was seen as the provision of a process for

preparing light-coloured alkylglycosides with an improved colour quality in terms of transparency.

A combination of document E1 with document E5e was not obvious as the latter failed to suggest that the use of a neutralising agent having a relatively large specific surface area would lead to an effective adsorption of the acid catalyst which in turn would have a positive impact on the transparency of the alkylglycosides. There was no disclosure of a relationship between the specific surface area of the magnesium oxide and the reaction rate. Thus, the skilled person, when trying to prepare alkylglycosides with an improved transparency, would have had no incentive to modify the process of document E1 according to present claim 1.

XVI. The appellant requested that the decision under appeal be set aside and the patent be revoked.

XVII. The respondent requested that the appeal be dismissed.

Reasons for the Decision

Admissibility of document E11

1. Document E11 was submitted by the appellant under cover of a letter dated 18 February 2010, i.e. ten months after it had filed its statement setting out the grounds of appeal and seven months after the respondent had replied thereto. Therefore, the filing of document E11 has led to an amendment to the appellant's case which may be admitted and considered only at the Board's discretion (see Article 13(1) RPBA). For the

exercise of its discretion, the Board is entitled to examine inter alia the prima facie relevancy of the document for the assessment of inventive step of the claims as granted.

2. Document E11 is directed to a process for peroxide bleaching of wood pulp for the production of paper. It is not concerned with the production of alkylglycosides. Wood pulp is a slurry of cellulose paste which is a homopolymer of β-(1-4) linked D-glucose units (cellubiose units), a structure which is not found in alkylglycosides. In the process of bleaching, **magnesium oxide is used as the sole alkaline source in the reaction of peroxide with cellulose** to achieve a desired brightness of the pulp (see page 2, lines 19 to 29). In contrast, claim 1 is directed to a process for preparing a **pale-coloured and transparent** alkylglycoside **solution**, with the **magnesium oxide being used as a neutralising agent of the product of the reaction between glucose and a fatty acid**. In view of these significant differences between the two processes in question, document E11 cannot qualify prima facie as a relevant source of information for the skilled person in view of an assessment of inventive step.

3. Therefore, the Board, in exercising its discretion, decides not to admit document E11 into the proceedings.

Inventive step

4. The assessment of inventive step will be based on the problem-solution approach as developed in the case law of the Boards of Appeal. As a first step, the document considered to represent the closest state of the art is

selected and the technical problem faced by the skilled person starting from that document is defined.

5. The opposition division and the parties have agreed that document E1 represents the closest state of the art. The Board sees no reason to depart from this finding.

6. Document E1 describes a process for the production of light-coloured alkyl oligoglycoside pastes. The process is characterised in that glucose is reacted with a fatty alcohol in the presence of an acid catalyst which in a further step is neutralised with a base. Example 1 illustrates an embodiment in which the base is a magnesium oxide.

7. The technical problem faced by the skilled person starting from document E1 may be seen in the provision of a method for the production of light-coloured alkylglycosides with an improved colour quality, close to transparency.

8. The method according to claim 1 is primarily distinguished from the method of document E1 according to its example 1, in that it uses a magnesium oxide as neutralising agent having a specific surface area of more than 30 m2/g, whereas in the method of document E1 a magnesium oxide is used whose specific surface area is not specified.

9. The appellant argued that in view of the technical information contained in documents E5a to E5e, the skilled person would have been incited to replace the magnesium oxide use in the process of document E1 with

a magnesium oxide having a specific surface area of 80 to 180 m^2/g, i.e. of more than 30 m^2/g, and to arrive at the process of claim 1 in an obvious manner.

10. Document E5 is a compilation of five product information sheets (E5a to E5e) concerning different magnesium oxides. It discloses the respective iodine adsorptions of these magnesium oxides (see the line "Jodadsorption"). The iodine adsorption, which extends from 80 (see E5d) to 180 (see E5e) mg J/g, corresponds to a specific surface area of 80 to 180 m^2/g (see document E9, page 33, right-hand column, third paragraph). The appellant referred especially to document E5e which discloses that the use of "*Aktiv Type F*" magnesium oxide (MgO) described therein is appropriate for chemical processes which require a rapid MgO-reaction (see paragraph entitled "Hauptanwendungen").

11. The question to be answered is whether the skilled person from this information would have directly derived that such a magnesium oxide, if used in Example 1 of document E1, would have provided a solution of the underlying technical problem, namely the provision of pale-coloured and transparent alkylglycosides. A positive answer would at least necessitate that the skilled person was aware of a link existing between the acceleration of the neutralising reaction and a colour change of the final product.

12. The appellant has not identified such a link either in its written submissions or at the oral proceedings. The comments made in its letter of 18 February 2010 with regard to an acceleration of the neutralising reaction

read: "*Ob dies auch zu einer Veränderung der Farben führt spielt an dieser Stelle keine Rolle*" (see page 3, first paragraph). This may be translated to "*Whether this [=the acceleration of the reaction] leads to a colour change does not play a role here*", and brings the Board to the conclusion that such a link in fact does not exist. Thus, document E5e fails to suggest that the specific surface area of magnesium oxide being at least 80 m^2/g has any effect on the colour and the transparency of alkylglycosides prepared according to claim 1 as granted. The skilled person facing the technical problem underlying the patent in suit would not have been incited to modify the process of document E1 by choosing a magnesium oxide having a specific surface area of more than 30 m^2/g.

13. Therefore, the process of claim 1 involves an inventive step. The same is true for the process of any of dependent claims 2 to 13. Thus, the main request meets the requirements of Article 56 EPC.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar The Chairman

A. Wolinski M. Wieser