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Datasheet for the decision
of 9 May 2019

Case Number: T 2382/15 - 3.3.07
Application Number: 07839916.9
Publication Number: 2088994
IPC: A61K8/73, A61K8/35, A61Q5/12
Language of the proceedings: EN

Title of invention:
DISPERSERABLE GLYOXAL TREATED CATIONIC POLYGALACTOMANNAN POLYMERS

Patent Proprietor:
HERCULES INCORPORATED

Opponents:
LAMBERTI SpA
The Dow Chemical Company

Headword:
Glyoxal Crosslinked Cationic Polygalactomannan / HERCULES

Relevant legal provisions:
RPBA Art. 12(4)
EPC Art. 123(2), 100(b), 54(3), 56

This datasheet is not part of the Decision.
It can be changed at any time and without notice.
Keyword:
Late-filed evidence - admitted (partly)
Amendments - added subject-matter (no)
Sufficiency of disclosure - (yes)
Novelty - implicit disclosure (no)
Inventive step - (yes)

Decisions cited:
G 0001/15
DECISION of Technical Board of Appeal 3.3.07
of 9 May 2019

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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
13 November 2015 concerning maintenance of the
Composition of the Board:

Chairwoman       Y. Podbielski
Members:          E. Duval
                 S. Albrecht
Summary of Facts and Submissions

I. The appeal lies against the interlocutory decision of the opposition division finding that European patent EP 2 088 994 (hereinafter "the patent") in amended form met the requirements of the EPC.

II. The patent was granted on the basis of 6 claims. Independent claim 1 related to a personal care composition comprising a glyoxal-crosslinked cationic guar and an active ingredient agent.

III. Two oppositions were filed against the patent on the grounds that its subject-matter lacked novelty and inventive step, it was not sufficiently disclosed and it extended beyond the content of the application as filed.

IV. The decision under appeal was based on the main request filed by letter dated 4 April 2013. Claim 1 of the main request read:

"A personal care composition selected from the group consisting of cleansing compositions, conditioners, and hair styling products, wherein the personal care composition comprises

- a glyoxal-crosslinked cationic guar having a substituent degree of substitution (DS) lower limit of 0.001 and an upper limit of 3.0,
- an active ingredient agent, and
- one or more surfactant compounds, selected from amphoteric surfactants, cationic surfactants, anionic surfactants, nonionic surfactants, zwitterionic surfactants, and combinations thereof."
V. The following documents *inter alia* were cited in the decision under appeal:

D3: CA 2,063,365
D5: WO 03/078474
D6: US 2005/227902
D8: WO 2008/058768
D10: US 5,186,928
D11: US 5,869,070
D12: US 6,930,078
D13: US 3,297,583
D14: US 3,350,386

VI. According to the decision under appeal:

(a) No selection from several lists in the application as filed was necessary to arrive at the claimed subject-matter. The replacement of "glyoxal treated cationic guar" with "glyoxal crosslinked cationic guar" found basis in paragraphs [0002] and [0008]. The requirements of Article 123(2) EPC were thus met.

(b) The feature pertaining to the degree of substitution did not cause the claimed subject-matter to be insufficiently disclosed.

(c) The claimed subject-matter differed from the teaching of D8 by the presence of a surfactant and was therefore novel.

(d) D12 was selected as closest prior art, whereas D6 was not seen as a suitable starting point. Starting from D12, the problem was seen as the provision of an alternative personal care composition comprising cationic guar and surfactants. The claimed subject-
matter, characterised in that the cationic guar is crosslinked with glyoxal, was not rendered obvious by the prior art.

VII. Opponent 1 (the appellant) lodged an appeal against this decision. In its statement of grounds of appeal, the appellant contested the findings in the decision under appeal regarding compliance with Article 123(2) EPC, sufficiency of disclosure, novelty and inventive step.

VIII. In its reply to the statement of grounds of appeal, the patent proprietor (the respondent) defended its case on the basis of the main request as upheld by the decision under appeal, and additionally filed auxiliary requests 1-7.

IX. On 12 February 2019, the Board issued a communication pursuant to Article 15(1) RPBA.

X. By letters dated 7 March 2019 and 11 March 2019, the appellant informed the Board that it would not attend the oral proceedings scheduled for 11 April 2019.

XI. The oral proceedings were cancelled on 20 March 2019.

XII. The following documents *inter alia* were cited during appeal proceedings:

D13a: GB 1038245
D24: WO2008/076178
Annex 1: Glyoxal crosslinked cationic guar in shampoo formulations - stability and performance tests
Annex 2: UV-Vis determination of Glyoxal in cationic guar derivatives and their formulation
Annex 3: Rheology Modifiers Handbook, page 135
D26: experimental report filed by the respondent on 9 August 2016
Annex 5: https://chemistscorner.com/cosmetic-surfactants-part-1/

XIII. The appellant's arguments, insofar as relevant to the present decision, can be summarized as follows:

(a) Annex 1 and Annex 2, filed by the appellant with its statement of grounds of appeal, should be admitted into the proceedings on account of their prima facie relevance, and because they related to the instability of the glyoxal-crosslinking, which was already discussed during the opposition proceedings.

(b) The experimental report D26, filed by the respondent with its reply to the statement of grounds of appeal, should be considered irrelevant and should not be admitted into the proceedings: D26 referred to compositions that were different from those disclosed in the contested patent, and did not allow a reliable comparison between crosslinked and non-crosslinked samples as these samples contained different amounts of different impurities.

(c) The expressions "glyoxal-treated" and "glyoxal-crosslinked" had different meanings, i.e. a glyoxal-crosslinked polygalactomannan physically contained covalent bonds between polygalactomannan
and glyoxal, whereas in a glyoxal-treated polygalactomannan said covalent bonds, which were not stable, were cleaved. Consequently, the amendment whereby the first expression was replaced with the second one introduced added subject-matter. Article 123(2) EPC was additionally infringed on account that claim 1 lacked the feature pertaining to a pH range of 3 to 7, and because the claim was based on the undisclosed combination of original claims 4 with claims 6 and 7.

(d) The claimed subject-matter did not meet the requirements of sufficiency of disclosure, because no glyoxal-crosslinked cationic guar was present in the composition as obtainable according to the method disclosed in the patent. As shown by Annex 1, the glyoxal crosslinking was completely lost after 24h, hence the contested patent did not teach how to obtain a personal care composition (i.e. a stable composition) comprising a glyoxal-crosslinked cationic guar.

(e) The finding of invalidity of the priority claim for the patent in the decision under appeal was final. D24, filed by the appellant with its statement of grounds of appeal, was accordingly prior art under Article 54(3) EPC, and anticipated claims 1-4.

(f) D8 disclosed the use of glyoxylated cationic guar in personal care compositions. Surfactants were generally known to be ubiquitous in cosmetic products, as evidenced by Annexes 4 and 5. The contested patent accordingly lacked novelty over D8.
(g) D12 could be seen as the closest prior art. The only distinguishing feature was the presence of a glyoxal-crosslinking in the cationic guar of the contested patent. This did not result in any conditioning effect. No inventive step could be acknowledged because this component did not make any contribution to solve the technical problem. An effect of the glyoxal crosslinking on dispersability in water was known from D13/D13a and D14. The claimed composition could at most be seen as an intermediate evolving spontaneously into a shampoo where the cationic guar is de-crosslinked. This would have been known by the skilled person in view of D28, as D28 showed that the glyoxal crosslinks were weak and were cleaved in diluted acid conditions. Such an intermediate was hence not patentable. The contested patent additionally lacked inventive step in view of combinations of D12 with D3, D6 with D5, D10 with D3 or D11 with D3.

XIV. The respondent's arguments, insofar as relevant to the present decision, can be summarized as follows:

(a) The appellant raised in appeal an objection of lack of novelty based on document D24, newly cited in the statement of grounds of appeal. The appellant should have been aware of D24, which claimed the same priority as the patent, when the notice of opposition was filed. On this basis, D24 should be held inadmissible under Article 12(4) RPBA.

(b) The appellant's insufficiency attack based on Annex 1 and 2, introduced with the statement of grounds of appeal, should have been presented during the
first instance proceedings and should be held inadmissible under Article 12(4) RPBA.

(c) D26 should be admitted into the proceedings as it was filed in reaction to the experimental data filed with the appellant's grounds of appeal.

(d) The replacement of "glyoxal-treated" with "glyoxal-crosslinked" found basis inter alia in paragraphs [0002] and [0008], where the feature was disclosed without reference to a degree of crosslinking or a pH. The appellant's experimental data were of no relevance to the question of whether the claims of the main request found basis in the application as filed. The combination of features defined by claim 1 did not result from selections from several lists in the application as filed, in particular because the glyoxal-crosslinked cationic guar of claim 1 was a highly preferred feature of the invention. Accordingly the requirements of Article 123(2) EPC were met.

(e) The claimed invention was sufficiently disclosed. Claim 1 did not define any feature relating to storage stability. Any loss of crosslinking under certain conditions sometime after the production of the composition did not mean that the composition containing glyoxal-crosslinked cationic guar was not suitable for use as a personal care composition.

(f) D8, prior art under Article 54(3) EPC, did not disclose a conditioning composition comprising a surfactant in addition to the glyoxal-crosslinked cationing guar. Shampoos were only mentioned in D8
in the context of the background art. Hence the claimed subject-matter was novel.

(g) D12 was a suitable starting point for the inventive step assessment. D12 disclosed hair-cleansing shampoo compositions containing a cationic guar derivative and a surfactant. D12 did not disclose the crosslinking of guar with any crosslinking agent. The experimental data on file showed that the glyoxal crosslinker positively influenced the conditioning effect, even when it was no longer bonded to the cationic guar. The objective technical problem was accordingly the provision of a personal shampoo composition providing improved conditioning of hair or skin. The claimed solution was not obvious in light of D3, since in D3 a glyoxal crosslinking was performed for the sole purpose of assisting a purification of guar. The comparative example 44 of D6 was not appropriate as closest prior art for the inventive step assessment; furthermore, D6 did not contain any suggestion of incorporating glyoxal crosslinks into cationic guar. D5 was concerned primarily with building material additives and was unrelated to the invention of the patent. D10 and D11 also did not provide any suggestion of the use of glyoxal-crosslinked cationic guar as a conditioning aid. Thus the claimed subject-matter involved an inventive step.

XV. The appellant requests that the decision under appeal be set aside and the patent be revoked in its entirety. The appellant additionally requests that D26 not be admitted into the proceedings.
XVI. The respondent requests that the appeal be dismissed and the decision of the opposition division based on the main request be upheld, or alternatively that the patent be maintained on the basis of one of auxiliary requests 1-7 filed together with the reply to the statement of grounds of appeal dated 9 August 2016. The respondent additionally requests that D24, as well as the new evidence (Annexes 1-2) and accompanying arguments regarding insufficiency of disclosure submitted by the appellant with the statement of grounds of appeal, not be admitted under Article 12(4) RPBA.

Reasons for the Decision

1. Cancellation of oral proceedings

By letters dated 7 March 2019 and 11 March 2019, the appellant informed the Board that it would not attend the oral proceedings. The appellant thus indicated that it did not wish to present its arguments orally and the Board therefore treats the announcement of the non-attendance as equivalent to a withdrawal of the request for oral proceedings.

Since the respondent had requested oral proceedings only as an auxiliary measure in the event that the main request would not be allowed, the present decision can be issued without oral proceedings taking place.

2. Admittance of D24

2.1 Document D24 was cited as prior art under Article 54(3) EPC for the first time in the appellant's statement of
grounds of appeal. D24 is an international patent application filed on the same date as the application underlying the patent and claiming priority from the same earlier application (US 60/856,486, hereinafter P). Thus, D24 can be prejudicial to novelty only if it validly claims priority from P, whereas the patent does not.

2.2 No justification was offered by the appellant for not citing D24 in the first instance proceedings. Contrary to the appellant's assertion, the decision under appeal does not recognise the invalidity of the priority, and consequently cannot be seen as causing the filing of D24. Rather, the appropriate time for citing such a readily accessible document should have been earlier in the first instance proceedings when the validity of the priority was questioned by the appellant (then opponent 1) in the notice of opposition. Accordingly, D24 not only could, but should have been cited in the first instance proceedings.

2.3 The Board additionally considers that D24 is not prima facie relevant: if, as alleged by the appellant, the claims of the main request cover subject-matter disclosed in D24 and for which D24 is entitled to priority from P, then it follows from G 1/15 that the claims of the main request are themselves entitled to a partial priority from the same P in respect of this subject-matter. Accordingly an objection of lack of novelty over D24 is prima facie not convincing.

2.4 For these reasons, D24 is not admitted into the proceedings pursuant to Article 12(4) RPBA.
3. Admittance of Annex 1, Annex 2 and D26

3.1 Annexes 1 and 2 were filed by the appellant with its statement of grounds of appeal, in support of an objection of insufficiency relating to the stability of the glyoxal bridges, and to contest the inventive step assessment made in the decision under appeal. Contrary to the respondent's assertion, the insufficiency attack based on Annex 1 and Annex 2 is not a fresh objection. The appellant did mention the issue of pH and maintenance of the glyoxal bridges during the first instance proceedings, as reflected in the decision under appeal (Summary of the Facts and Submissions, point 11.2).

The Board thus considers the filing of Annexes 1 and 2 in appeal as an appropriate reaction to the findings in the decision under appeal, and can identify no objective reason why the appellant should have been expected to file Annex 1 and Annex 2 during the first instance proceedings, such that their filing with the statement of grounds of appeal does not prejudice their admittance.

3.2 The experimental data D26 was filed with the respondent's reply to the statement of grounds of appeal and can be seen as a reaction to the filing of Annexes 1 and 2.

3.3 In view of the above, the Board sees no reason to exercise its discretion under Article 12(4) RPBA not to admit Annexes 1 and 2 as well as D26 into the proceedings. These documents thus form part of the appeal proceedings.
Main request

4. Article 123(2) EPC

4.1 In claim 1 of the main request, as compared with claim 1 of the application as filed, the expression "glyoxal-treated" was amended into "glyoxal-crosslinked". For the Board, this amendment finds basis in paragraph [0008] of the application as filed, which discloses that the personal care composition comprises a "glyoxal-crosslinked" cationic polygalactomannan polymer.

The appellant's objection against the replacement of "glyoxal-treated" with "glyoxal-crosslinked" is based on an alleged transient nature of the glyoxal crosslinking. The appellant considers the two expressions to have different meanings, i.e.:

(a) a glyoxal-crosslinked polygalactomannan physically contains covalent bonds between polygalactomannan and glyoxal, whereas,

(b) in a glyoxal-treated polygalactomannan, said covalent bonds were cleaved.

However, such a transient nature or cleavage of the glyoxal crosslinking cannot be derived from the application as filed. The application as filed relates both to the treatment of polygalactomannan with glyoxal, leading to glyoxal-crosslinked polygalactomannan (e.g. claim 12 or [0007]), and to personal care compositions comprising a glyoxal-crosslinked cationic polygalactomannan polymer (see [0008]). Consequently, "glyoxal-crosslinked polygalactomannan" and "glyoxal-treated
polygalactomannan" are, in the context of the application as filed, synonymous and are both construed as referring to the product resulting directly from the treatment/crosslinking of polygalactomannan with glyoxal, and which physically contains covalent bonds between polygalactomannan and glyoxal. The replacement of one expression with the other does not introduce new subject-matter.

This conclusion is neither modified by Annex 1 nor by D28. Annex 1 is an experimental report which is not relevant for assessing the teaching of the application as filed. As to D28, it is evidence of the common general knowledge that acetalts and ketalts (which are presumably formed upon treatment of the cationic guar with glyoxal) are easily cleaved by dilute acids. However, it cannot be derived from D28 that, on reading the application as filed, the skilled person would be in any doubt that the component to be incorporated into the personal care composition is a glyoxal-crosslinked polygalactomannan, irrespective of any later stability, since this is explicitly mentioned in paragraph [0008].

4.2 Regarding the alleged missing limitations in claim 1 regarding the pH and degree of crosslinking, the Board finds that a pH of 3-7 is a feature of the step of dispersion in water in the production method of paragraph [0007] of the application as filed, but that paragraph [0008] discloses the presence of glyoxal-crosslinked cationic polygalactomannan in the personal care composition without limit as to pH or degree of crosslinking. Therefore, there is sufficient basis in the application as filed for isolating the crosslinking feature from the the pH and the degree of crosslinking.
4.3 The features of claim 1 of the main request pertaining to the degree of substitution of the cationic guar, and to the personal care composition, are respectively based on claim 4 and claims 6-7 of the application as filed. Despite the lack of dependency between said claim 4 and claims 6-7, the amendment does not introduce an undisclosed combination of features, because the description (see [0015]) describes the degree of substitution in a general context.

4.4 Accordingly, the main request fulfills the requirements of Article 123(2) EPC.

5. Sufficiency of disclosure

Claim 1 relates to a personal care composition comprising inter alia a defined glyoxal-crosslinked cationic guar. Claim 1 contains no feature pertaining to the achievement of the benefits mentioned in paragraphs [0023] and [0024] of the patent, such as a conditioning effect, or to the stability of the composition or of the crosslinking.

The appellant submits that the crosslinking is completely lost after 24 hours in a shampoo composition (see Annex 1). However, this does not prevent the skilled person to prepare a composition (initially) comprising glyoxal-crosslinked cationic guar. The appellant's allegation that no glyoxal-crosslinked cationic guar is present in the composition as obtainable according to the method disclosed in the patent is not supported by the evidence on file: on the contrary, the amounts of released glyoxal reported in annex 1 for the shampoo formulations 1-3 indicate that the compositions initially contain glyoxal-crosslinked cationic guar.
Furthermore, it is not shown that the de-crosslinking prejudices the properties of the shampoo. It has not been shown that a particular level of stability is implicitly required by the term "personal care", and that this level is not achieved by compositions comprising the glyoxal-crosslinked cationic guar.

Consequently the requirements of sufficiency of disclosure are met.

6. Novelty

D8 is prior art under Article 54(3) EPC to the extent that the claimed priority of the patent is invalid. D8 discloses glyoxylated cationic guar for use in the cosmetic field, but contains no explicit disclosure of a composition comprising both said guar and a surfactant.

The appellant expresses the view that the references in D8 to a cosmetic use of the glyoxal-crosslinked cationic guar (see [0053]) must be linked to the uses recited in paragraph [0004], including the use in shampoos which are known to contain surfactants.

The Board does not share this opinion: despite the title of the section in which they appear ("Technical Field"), paragraphs [0003]-[0005] pertain to "Cationic polysaccharides" in general, i.e. not to the glyoxalated analogues of the invention (as in [0002]) but to previously known ones, as evidenced by the expression "very used" or the reference to prior art. The use in a shampoo is not disclosed in the context of a glyoxylated cationic guar. The disclosures in D8 of a cosmetic use of the glyoxylated cationic guars cannot
be equated either with an implicit disclosure of a composition comprising a surfactant, since a cosmetic use does not inevitably imply the presence of a surfactant.

This conclusion is not modified by Annex 4 and Annex 5, since neither document indicates that a cosmetic composition necessarily comprises a surfactant: in particular, in Annex 5, surfactants are described as the cornerstone of nearly all "formulation [sic] and cosmetic science in general".

Accordingly the main request satisfies the criteria of novelty.

7. Inventive step

7.1 The personal care compositions of the present invention are characterised by a glyoxal-crosslinked cationic guar. According to the patent (see [0005], [0006], [0012] and [0023]), the glyoxal-crosslinked cationic guar acts as conditioning and thickening agent and deposits with high efficacy on hair/skin, and avoids the use of boron.

7.2 The Board, in agreement with both parties, considers D12 to represent a suitable starting point for the assessment of inventive step.

D12 addresses the problem of providing shampoos capable of depositing conditioning aids (e.g. column 1, lines 42-43) and describes (see column 2, lines 10-21) shampoo compositions comprising a cationic guar, a surfactant and an aqueous carrier (i.e. an active ingredient agent in the sense of the patent, see [0017]). It is not contested that the cationic charge
density mentioned in D12 for the cationic guar (see column 6, lines 50-61) entails a degree of substitution in the range 0.001-3.0.

7.3 The claimed subject-matter differs from D12 in that the personal care composition comprises a glyoxal-crosslinked cationic guar. Accordingly, the differentiating feature is not merely that a glyoxal-crosslinked cationic guar was used for the production of the personal care composition, i.e. the composition of claim 1 must contain the crosslinked product and not merely its degradation products.

7.4 The parties have debated whether improved conditioning properties can be said to result, even indirectly, from the presence of the glyoxal-crosslinked cationic guar in the composition. Since the Board can come to a conclusion independently of the achievement of such an effect, the question need not be answered.

The objective technical problem to be solved by the claimed invention is thus formulated as the provision of alternative personal care compositions. This problem is solved by the compositions of claim 1.

7.5 Turning to the obviousness of the solution, the Board notes that the prior art does not teach to use a glyoxal-crosslinked cationic guar as component in a personal care composition.

D3 shows a process whereby guar is derivatized (including using cationic alkylating agents, see page 5 lines 12-19), then crosslinked with glyoxal to facilitate the step of washing with water, before being finally treated under basic conditions to remove the glyoxal crosslinking (see claim 1). The Board agrees
with the opposition division and the respondent that D3 does not teach to use the intermediate glyoxal-crosslinked cationic guar as component in a personal care composition. The use of glyoxal-crosslinked cationic guar in a personal care composition is not taught either in D13/D13a or D14.

Contrary to the appellant's argument, the presence of the glyoxal-crosslinked cationic guar does contribute to solving the above technical problem: the presence of the glyoxal-crosslinked cationic guar is undoubtedly a feature of technical character, and contributes at least to the solution of the problem of providing alternative personal care compositions, i.e. by being compatible, as a component, with the use of the composition in personal care.

The Board notes the appellant's argument that the shampoo compositions have limited stability and that the skilled person would expect the glyoxal crosslinks to be cleaved in acid conditions, as supported by D28. Nonetheless, this does not lead to the conclusion that the claimed composition should be seen as an "intermediate" whose patentability would be ruled out on account of it being involved in a non-inventive process. As reflected in the formulation of the technical problem, the claimed composition is useful per se as a personal care composition.

The appellant also raised objections of lack of inventive step over D6 as closest prior art in combination with D5, or over D10 or D11 as closest prior art in combination with D3.

However, D5 relates to hydroxyalkyl guar derivatives and not to cationic guar derivatives. Furthermore,
although the use of prior art hydroxyalkyl guar
derivatives in e.g. shampoos is mentioned (see page 2,
line 16), D5 does not consider any use for the glyoxal-
treated guar other than as additive for building
products (see page 1, lines 3-6).

The remaining documents D6, D10 and D11, to the extent
that they could represent suitable starting points for
the assessment of inventive step, do not disclose a
glyoxal-crosslinked cationic guar.

Accordingly, in the absence of any suggestion in the
prior art to employ a glyoxal-crosslinked cationic guar
as defined in claim 1 in a personal care composition,
the claimed subject-matter involves an inventive step
also when taking these documents as starting point.

Consequently, the claimed subject-matter meets the
requirements of Article 56 EPC.
Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairwoman:

S. Lichtenvort Y. Podbielski

Decision electronically authenticated