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Datasheet for the decision of 16 May 2017

Case Number: T 1855/15 - 3.3.03

Application Number: 00911740.9

Publication Number: 1078008

IPC: C08B11/20, C08B1/00, C08B1/02

Language of the proceedings: EN

Title of invention:
MICROFIBRILLAR CELLULOSE DERIVATIZED TO COMPRISE ANIONIC CHARGES

Patent Proprietor:
Hercules Incorporated

Opponents:
Akzo Nobel Chemicals International BV
Stora Enso AB OYJ

Headword:

Relevant legal provisions:
EPC Art. 123(2), 111(1)
RPBA Art. 12(4)

Keyword:
Amendments - allowable (main request and auxiliary request 1: no; auxiliary request 2: yes)
Late-filed request - submitted with the statement of grounds of appeal
Appeal decision - remittal to the department of first instance (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
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Case Number: T 1855/15 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 16 May 2017

Appellant: (Patent Proprietor)	Hercules Incorporated 500 Hercules Road Wilmington, DE 19808 (US)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Respondent: (Opponent 1)	Akzo Nobel Chemicals International BV Velperweg 76 6824 BM Arnhem (NL)
Representative:	Rupp, Christian Mitscherlich PartmbB Patent- und Rechtsanwälte Sonnenstraße 33 80331 München (DE)
Respondent: (Opponent 2)	Stora Enso AB OYJ P.O. Box 309 00101 Helsinki (FI)
Representative:	Forstmeyer, Dietmar BOETERS & LIECK Oberanger 32 80331 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 8 July 2015 revoking European patent No. 1078008 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	D. Semino
Members:	O. Dury
	R. Cramer

Summary of Facts and Submissions

I. The appeal by the patent proprietor lies against the decision of the opposition division of the European Patent Office posted on 8 July 2015 revoking European patent No. 1 078 008.

II. The claims of the application as filed which are relevant to the present decision read as follows:

"1. A derivatized microfibrillar polysaccharide, derivatized to comprise substituents that provide electrostatic and/or steric functionality, wherein said electrostatic functionality comprises anionic charge."

"15. The derivatized microfibrillar polysaccharide of claim 1, wherein said derivatized microfibrillar polysaccharide is derivatized microfibrillar cellulose having a degree of substitution of less than about 0.5."

"20. The derivatized microfibrillar polysaccharide of claim 15, wherein said degree of substitution is between about 0.02 and about 0.5."

"22. The derivatized microfibrillar polysaccharide of claim 1, derivatized to comprise substituents that provide electrostatic functionality in the form of anionic charge, wherein the degree of substitution representing substituents that provide electrostatic functionality in the form of anionic charge is at least about 0.02."

III. Claims 1 and 6 of the granted patent read as follows (in claim 1, additions as compared to original claim 1 are indicated in **bold**, deletions in ~~strikethrough~~):

"1. A derivatized microfibrillar ~~polysaccharide~~ **cellulose,** derivatized to comprise substituents that provide electrostatic ~~and/or steric~~ functionality, wherein said electrostatic functionality comprises anionic charge,

wherein said derivatized microfibrillar cellulose is derived from (1) purified, optionally bleached wood pulps produced from sulfite, kraft or prehydrolyzed kraft pulping processes or (2) purified cotton linters,

wherein the degree of substitution is between 0.02 and 0.5, and

wherein the derivatized microfibrillar cellulose is characterized by forming a gel at at least one point in the concentration range of from 0.05 % up to 0.99% in water."

"6. The derivatized microfibrillar cellulose of claim 1, wherein the degree of substitution representing substituents that provide electrostatic functionality in the form of anionic charge is at least 0.02."

IV. Two notices of opposition against the patent were filed, in which the revocation of the patent in its entirety was requested on the grounds of Article 100(a) EPC (lack of novelty and lack of an inventive step), Article 100(b) EPC and Article 100(c) EPC.

V. In the contested decision the opposition division *inter alia* held that none of the main request (granted patent) and of auxiliary requests 1-13 fulfilled the

requirements of Article 123(2) EPC, one of the main arguments being that the specific combinations of features being claimed were not directly and unambiguously derivable from the application as filed.

VI. The patent proprietor (appellant) appealed the above decision. With the statement setting out the grounds for the appeal the appellant filed auxiliary requests 1 to 8.

The subject-matter of claims 1 and 2 of auxiliary request 1 was identical to that of claims 1 and 6 as granted, respectively.

Auxiliary request 2 consisted of a single claim which was identical to granted claim 1.

VII. Oral proceedings before the Board were held on 16 May 2017 in the presence of all parties.

VIII. The appellant's arguments, insofar as relevant to the decision, may be summarised as follows:

Main request

(a) Granted claim 1 was based on the combination of original claim 20, which was dependent on claims 1 and 15, with the passage at page 4, lines 21-22 of the application as filed. Considering that the application as filed taught that the degree of substitution mentioned in original claim 20 was related to the amount of substituents providing electrostatic functionality no selection was made within the two alternatives (electrostatic and/or steric functionality) specified in original claim 1. The sources of cellulose according to

features (1) and (2) of granted claim 1 were indicated to constitute preferred embodiments at page 4, lines 1-3 and page 10, lines 20-22 of the application as filed. Deleting the other preferred embodiment (3) as taught in that passage of the application as filed did not add any technical contribution. The gelling feature now specified in granted claim 1 was further disclosed as one of three alternatives on page 4, lines 18-22 of the application as filed and corresponded to the general aim of the invention indicated at the top of page 3. The other two gelling features specified on page 4, lines 18-20 were not in contradiction with the gelling feature of granted claim 1 and did not coincide with said aim. In view of the above, the subject-matter of claim 1 could be arrived at by combining original claim 20 with a single passage of the description after further limitation to some of the preferred cellulose sources disclosed in the application as filed. Therefore, the requirements of Article 123(2) EPC were met.

(b) Granted claim 6 was supported by the same passages of the application as filed as identified for claim 1 further combined with original claim 22.

Auxiliary requests 1-2

(c) Considering that the claims of auxiliary requests 1 and 2 consisted of granted claims only, there was no reason for not admitting those requests into the proceedings pursuant to Article 12(4) RPBA.

(d) Regarding Article 123(2) EPC the same arguments as for the main request were valid.

IX. The arguments of respondents 1 and 2 (opponents 1 and 2), insofar as relevant to the decision, may be summarised as follows:

Main request

(a) To start from original claim 20 as done by the appellant already constituted a selection within the ambit of the application as filed, namely to choose to use polysaccharides with electrostatic functionality as a mandatory feature. Besides, considering that the application as filed was also directed to blends of polysaccharides and to substituents providing steric functionality, the restriction in granted claim 1 to electrostatic functionality which comprises anionic charges only constituted a further selection to be made.

Regarding the definition of the source of cellulose, other sources of cellulose different from features (1) and (2) of granted claim 1 were disclosed in the application as filed, also as preferred embodiment. Therefore, the choice of two sources of cellulose according to granted claim 1 represented a further selection.

Besides, considering that the gelling feature specified in granted claim 1 was in contradiction with the other two gelling features mentioned on page 4, lines 18-22 of the application as filed, the extraction of that feature from the description could not be unambiguously derivable therefrom. Also, it was not indicated at page 4, line 18 that the gel had to be mandatorily formed but only that it could ("may form a gel"). Therefore, the insertion of the gelling feature as a mandatory

feature in granted claim 1 represented a further selection.

Finally, the subject-matter of granted claim 1 differed from that of original claim 20 in that the term "about" was deleted.

(b) In view of the above, the specific combination of features according to granted claim 1 was not directly and unambiguously disclosed in the application as filed and could only be arrived at after performing at least three selections within the ambit of the application. Therefore, the requirements of Article 123(2) EPC were not met.

Auxiliary requests 1 and 2

(c) Auxiliary requests 1 and 2 could have been submitted earlier e.g. during the first instance proceedings. Although they comprised only granted claims, new issues had to be dealt with, e.g. for the dependent claims in respect of Article 123(2) EPC. Therefore, they should not be admitted to the proceedings pursuant to Article 12(4) RPBA.

(d) Regarding Article 123(2) EPC the same arguments as for the main request were valid.

X. The appellant requested that the decision under appeal be set aside and the case be remitted to the department of first instance for further prosecution on the basis of the main request (patent as granted) or on the basis of one of auxiliary requests 1-8, all filed with the statement of grounds of appeal.

The respondents requested that the appeal be dismissed or, in the event the decision under appeal be set aside, the case be remitted to the department of first instance for further prosecution.

Reasons for the Decision

Main request (patent as granted)

1. Article 123(2) EPC - Claim 1 as granted

1.1 According to standard jurisprudence an amendment is to be regarded as introducing subject-matter extending beyond the content of the application as filed, and hence unallowable, if the overall change in the content of the application/patent results in the skilled person being presented with information that is not directly and unambiguously derivable from the information presented by the application as filed (Case Law of the Boards of Appeal of the EPO, 8th edition, 2016, II.E.1).

1.2 The subject-matter of granted claim 1 differs from that of claim 20 as originally filed, which is dependent on claims 1 and 15 as originally filed, in that:

(a) the definition of the source of the cellulose is limited according to features (1) and (2);

(b) the expression "wherein the derivatized microfibrillar cellulose is characterized by forming a gel at at least one point in the concentration range of from 0.05 % up to 0.99% in water" is added (hereinafter referred to as "the gelling feature" of granted

claim 1);

(c) the term "about", which was used to define the range of degree of substitution is deleted.

1.2.1 In that respect, original claim 20, through its dependency on original claim 15 ("The derivatized microfibrillar polysaccharide of claim 15") and the requirement of said claim 15 that "wherein said derivatized microfibrillar polysaccharide is derivatized microfibrillar cellulose", is limited to a cellulose compound *per se*. Therefore, original claim 20 is not directed to blends of polysaccharides according to page 3, line 25 or page 5, lines 9-13 of the application as filed as argued by the respondents and no selection among alternatives defined in original claim 20 has to be made in order to arrive at the cellulose compound defined in granted claim 1.

It is further derivable from the passages at page 11, lines 26-29 and at page 12, lines 19-20 of the application as filed that throughout the original application the "degree of substitution" (DS) is used to characterise the amount of substituents providing electrostatic functionality, whereas the "molar substitution" (MS) is used to characterise the amount of substituents providing steric functionality. Therefore, the indication in claims 15 and 20 of a range of degree of substitution implicitly indicates that the derivatized microfibrillar cellulose of original claim 20 must comprise substituents providing electrostatic functionality. In that respect, it is also noted that the open wording of granted claim 1 "derivatized to **comprise** substituents that provide electrostatic functionality, wherein said electrostatic functionality **comprises** anionic charge" (emphasis by

the Board) does not impose that the substituents are limited to those providing electrostatic functionality only, as argued by respondent 2 during the oral proceedings before the Board. That wording only requires that at least some of the substituents of the cellulose must provide electrostatic functionality and that at least some of them must comprise anionic charge.

1.2.2 Regarding amendment (a), it is indicated on page 4, lines 1-3 and on page 10, lines 20-23 that preferred sources of cellulose are (1) purified, optionally bleached wood pulps produced from sulfite, kraft, or prehydrolyzed kraft pulping processes, (2) purified cotton linters and (3) fruits and vegetables. However, it is further specified at page 3, line 28 and at page 10, lines 23-24 that the source of the cellulose is not limiting and that any source may be used. It was neither shown nor argued by the parties that the limitation in granted claim 1 to sources of cellulose according to features (1) and (2) is related to any technical effect and/or played any role. Therefore, amendment (a) amounts to the mere deletion of certain of the preferred sources of cellulose indicated in the application as filed, whereby said limitation was not shown to lead to the skilled person being presented with any new information as compared to the application as filed.

1.2.3 Regarding amendment (b), the parties made reference to the passage at page 4, lines 18-23 of the application as filed which reads as follows:

"The derivatized microfibrillar cellulose of the present invention may form a gel in water throughout the concentration range of between about 0.01 % and

about 100%, or throughout the concentration range of between about 0.01 % and about 50 % in water, or at at least one point in the concentration range of from about 0.05 % up to about 0.99% in water. In an alternative embodiment, the derivatized microfibrillar cellulose of the present invention forms a gel in water at a concentration of about 0.95%."

i) The gelling feature of granted claim 1 corresponding to amendment (b) thus represents one of the three alternative gelling features mentioned in the first sentence of said passage.

In that respect, considering that amendment (b) imposes that a gel is formed (at least) *at a single point* in the concentration range of 0.05%-0.99% whereas the two other gelling features indicated in the first sentence of the passage at page 4, lines 18-23 require that a gel is formed *throughout* a larger range fully encompassing said range of 0.05%-0.99%, amendment (b) constitutes, among the three gelling features specified in that passage of the application as filed, the embodiment with the broadest scope. Besides, there is no contradiction between the definition of the gelling feature according to amendment (b) and those according to the other two features of the first sentence at page 4, lines 18-23 of the application as filed, contrary to the respondents' view during the oral proceedings before the Board.

The gelling feature of granted claim 1 corresponding to amendment (b) is further in line with one of the general goals of the invention which was to provide derivatized microfibrillar polysaccharides that are capable of forming a gel at concentration of 1% or less (page 3, lines 1-5). Therefore, there is no reason to

consider that the skilled person would not read amendment (b) as a feature illustrating the general aim defined at page 3, lines 1-5 of the application as filed, as argued by the respondents during the oral proceedings before the Board.

ii) The respondents further argued that the first sentence at page 4, lines 18-23 of the application as filed, because of the wording "may form a gel" did not impose that a gel had mandatorily to be formed under the conditions specified therein, but merely expressed a possibility. However, such a reading of that expression, which would be directed to defining a range in relation to no effect, does make sense technically. Therefore, it is considered that the skilled person would not read that passage in that manner, contrary to the respondents' view. That reading is further not in contradiction with the second passage of that sentence, which defines a fourth, alternative, embodiment for defining a gelling feature.

1.2.4 In view of the above, amendment (b) is disclosed at page 4, lines 18-23 of the application as filed in the most general manner to quantify the gelling property of the derivatized microfibrillar cellulose encompassed by the application as filed and in accordance with one of the general goals of the invention.

1.3 Regarding amendment (c), it is common practice that the term "about" should not be used to define ranges in a claim because it may render the subject-matter for which protection is sought unclear, and that is has to be deleted from the claims. The deletion of that term, however, does not change the overall information contained in the application as filed and is, thus,

allowable pursuant to Article 123(2) EPC.

1.4 Regarding the combination of amendments (a), (b) and (c), it is noted that since it was concluded in above section 1.2.4 that amendment (b) is disclosed in a general manner in the application as filed, it would in particular apply to the derivatized microfibrillar cellulose defined in original claim 20.

1.4.1 In that respect, although the application as filed is directed to polysaccharides in general (including blends thereof: see e.g. claims 1, 2 and page 5, lines 9-13), it makes no doubt that cellulose is explicitly indicated therein as constituting the most preferred polysaccharide (see e.g. page 3, lines 28-29; page 6, lines 18; page 10, line 10; all the examples). This is further confirmed by the structure of the original set of claims which contains many claims directed to various embodiments of derivatized microfibrillar cellulose *per se* (e.g. original product claims 7-10, 15-21, 25-26, 35-39, 41, 58, 63-66), whereby no other polysaccharide compound *per se* is otherwise claimed.

Also, the skilled person would recognise from the application as filed as a whole that two main embodiments were originally aimed at, namely derivatized microfibrillar polysaccharides comprising electrostatic functionality and derivatized microfibrillar polysaccharides comprising steric functionality (claim 1 comprises both embodiments; the structure of the original set of claims comprises groups of claims directed to each of those embodiments; use throughout the application of either DS or MS in order to characterise and distinguish either electrostatic or steric functionality).

Further considering that any derivatized microfibrillar polysaccharide must have a certain degree of substitution (since according to page 11, lines 26-31 the degree of substitution quantifies the amount of substituents present on the polysaccharide to be derivatized), the subject-matter of claims 15 and 20 in fact constitutes a limitation of the subject-matter of claim 1 to one of the two most preferred polysaccharide (cellulose comprising electrostatic functionality), whereby the degree of substitution which is implicitly present in claim 1 is further limited to a specific range.

In view of the above it makes no doubt that embodiments according to claims 15 and 20 would have been considered as good candidates by the skilled person aiming at carrying out the invention taught in the application as filed.

Further considering the conclusions drawn in sections 1.2.2, 1.2.3 and 1.2.4 above, it is concluded that in the circumstances of the present case, the application as filed contains pointers to the combination of derivatized microfibrillar cellulose defined according to original claim 20, limited to two of the most preferred embodiments for the cellulose source according to amendment (b) and satisfying the gelling feature having the broadest scope defined in the application as filed according to amendment (c).

1.4.2 It was further not shown by the respondents that the subject matter of original claim 20 and that of the passage at page 4, lines 18-22 (amendment (b)) are related to separate embodiments of the application and that, in combining those passages, the appellant artificially created a particular embodiment (see Case

Law of the Boards of Appeal of the EPO, 8th edition, 2016, II.E.1.4.1). Nor was it shown or argued by the respondents that there would be any good reason why the technical features that are now specified in granted claim 1, in particular the source of the cellulose, the range of degree of substitution, and the gelling feature, could not be combined one with each other. Therefore, in the present case, although the combination of features defined in granted claim 1 is not explicitly disclosed in the application as filed, it was not shown to result in the skilled person being presented with information that is not directly and unambiguously derivable from the information presented by the application as filed.

1.5 In view of the above granted claim 1 satisfies the requirements of Article 123(2) EPC.

2. Article 123(2) EPC - Claim 6 as granted

2.1 The subject-matter of granted claim 6 differs from that of granted claim 1 in that it further specifies that the degree of substitution representing substituents that provide electrostatic functionality in the form of anionic charge is at least 0.02 (hereinafter: amendment (d)).

2.2 According to the application as filed the substituents providing electrostatic functionality were not limited to those comprising anionic charge but could also comprise e.g. cationic charge (page 5, lines 4-9). Therefore, the subject-matter of granted claim 6 is a limitation of that of granted claim 1 imposing a further, more specific requirement in terms of the amount of substituents with an anionic charge.

2.3 The appellant argued that the support in the application as filed for amendment (d) was original claim 22.

However, since original claim 22 is only dependent on claim 1 (and not on original claim 15 or 20 as was the case for original claim 20) the subject-matter of original claim 22 is directed to derivatized microfibrillar polysaccharide in general and not to cellulose in particular. Besides, it does not contain any requirement in terms of - total - degree of substitution. Therefore, originally claim 22 does not provide a direct and unambiguous disclosure of the subject-matter of granted claim 6 which is directed to derivatized microfibrillar cellulose having a - total - degree of substitution between 0.02 and 0.5 in combination with a degree of substitution related to substituents with an anionic charge of at least 0.02.

2.4 No other basis has been indicated by the appellant for granted claim 6.

2.5 For those reasons, granted claim 6 does not satisfy the requirements of Article 123(2) EPC and, at least for those reasons, the ground for opposition under Article 100(c) EPC precludes the maintenance of the patent as granted.

Auxiliary requests 1 and 2 - admissibility

3. Auxiliary requests 1 and 2 were both submitted together with the appellant’s statement of grounds of appeal pursuant to Article 12(2) RPBA.

3.1 Each of auxiliary requests 1 and 2 only consists of granted claims and contains granted claim 1.

3.2 Considering that the opposition division had decided that granted claim 1 did not fulfill the requirements of Article 123(2) EPC, the filing of auxiliary requests 1 or 2 during the opposition proceedings was not necessary, since they could not have overcome the deficiency retained by the opposition division. Therefore, it cannot be held that those requests should have been filed during the first instance proceedings.

3.3 Besides, since auxiliary requests 1 and 2 only comprise granted claims, they do not extend the scope or the framework of debate as set out by the statement of grounds of appeal and the reply of the respondents thereto.

3.4 In view of the above there is no reason for not admitting any of auxiliary requests 1 and 2 into the proceedings pursuant to Article 12(4) RPBA.

Auxiliary requests 1 and 2 - Article 123(2) EPC

4. Claim 2 of auxiliary request 1 being identical with granted claim 6, it does not fulfil the requirements of Article 123(2) EPC for the reasons indicated in section 2 above. Therefore, auxiliary request 1 is not allowable.

5. The sole claim of auxiliary request 2 being identical with granted claim 1, it satisfies the requirements of Article 123(2) EPC for the reasons given in section 1 above.

6. Remittal

Considering that i) the grounds for opposition pursuant to Article 100(a) and (b) EPC, which were further raised, were not dealt with in the contested decision, and ii) all parties requested remittal to the first instance, the Board finds it appropriate to remit the case to the department of first instance for further prosecution (Article 111(1) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution on the basis of auxiliary request 2 filed with the statement of grounds of appeal.

The Registrar: The Chairman:

L. Malécot-Grob D. Semino

Decision electronically authenticated