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**Datasheet for the decision
of 17 April 2026**

Case Number: T 0408/24 - 3.3.03

Application Number: 18208846.8

Publication Number: 3466983

IPC: C08B37/00

Language of the proceedings: EN

Title of invention:

ACTIVATED PECTIN-CONTAINING BIOMASS COMPOSITIONS, PRODUCTS AND
METHODS OF PRODUCING

Patent Proprietor:

CP Kelco ApS

Opponent:

Cargill, Incorporated

Relevant legal provisions:

EPC Art. 54, 56, 111

RPBA 2020 Art. 12(4)

Keyword:

Novelty - Main request (yes)

Inventive step - Main request and Auxiliary request 1 (no)

Amendment to case - admissibly raised and maintained (yes) -
Auxiliary requests 2-14

Appeal decision - remittal to the department of first instance
(yes)



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0408/24 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 17 April 2026

Appellant: CP Kelco ApS
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted/
electronically transmitted on 15 January 2024
concerning maintenance of the European Patent
No. 3466983 in amended form.

Composition of the Board:

Chairman D. Semino
Members: D. Marquis
A. Bacchin

Summary of Facts and Submissions

I. The appeal lies against the decision of the opposition division concerning maintenance of European patent No. 3 466 983 on the basis of the claims of auxiliary request 1 filed as auxiliary request 8 with letter of 5 October 2023 and on an adapted description. The decision was based on the patent as granted as main request and on auxiliary request 1.

II. Claim 1 as granted read as follows:

"1. An activated pectin-containing biomass composition obtained from citrus fruit, comprising:

an insoluble fiber component comprising cellulosic material; and

a soluble pectin component comprising readily soluble pectin;

wherein the activated pectin-containing biomass composition has a coil overlap parameter of 2 or greater".

Claim 1 of auxiliary request 1 corresponded to claim 1 of the main request for which the range defining the coil overlap parameter was modified to "2.5 or greater".

III. The following documents were *inter alia* submitted during the opposition proceedings:

D2 : US 5,567,462

D10 : Statement by Jan A. Staunstrup "Variation in pectin containing biomass materials" filed by

the patent proprietor with letter of 14 November 2022

D14 : "Quality analysis of pectin in commercially available lemon and orange peel between 2001 and 2020/2022" filed by the patent proprietor with letter of 5 October 2023

D14A : "Quality analysis of pectin in commercially available lemon and orange peel between 2001 and 2020/2022" filed by the patent proprietor with letter of 24 November 2023

D15 : "Methodology for repeating Example 1 of D2 and Example 1 of D3" filed by the patent proprietor with letter of 5 October 2023

D15A : "Methodology for repeating Example 1 of D2 and Example 1 of D3" filed by the patent proprietor with letter of 24 November 2023

D16 : Declaration of Gino Mangiante dated 9 November 2023

- IV. The decision under appeal, as far as it is relevant to the present appeal, concluded that granted claim 1 was sufficiently disclosed but lacked novelty over D2. The claims of auxiliary request 1 were sufficiently disclosed. Claim 1 of auxiliary request 1 was novel over the cited prior art and involved an inventive step over D2 taken as the closest prior art.
- V. Both the patent proprietor and the opponent lodged an appeal against the decision of the opposition division.
- VI. The patent proprietor filed auxiliary requests 2-14 with their reply to the statement of grounds of appeal and auxiliary requests 3A, 4A, 5A, 9A, 10A and 11A with letter of 11 June 2025.

VII. Oral proceedings before the Board were held on 17 April 2026.

VIII. The final requests of the parties were as follows:

The patent proprietor requested that the decision under appeal be set aside and the opposition be rejected or that the patent be maintained in the form of auxiliary request 1. The patent proprietor alternatively requested that the case be remitted to the department of first instance for further prosecution on the basis of one of auxiliary requests 2, 3, 3A, 4, 4A, 5, 5A, 6-9, 9A, 10, 10A, 11, 11A or 12 to 14 in that order, auxiliary requests 2-14 being filed with their reply to the statement of grounds of appeal and auxiliary requests 3A, 4A, 5A, 9A, 10A and 11A being filed with letter of 11 June 2025.

The opponent requested that the decision under appeal be set aside and that the patent be revoked. Additionally, it requested that documents D17 and D18 not be admitted.

Claim 1 of auxiliary request 1 corresponded to claim 1 of the main request in which the range defining the coil overlap parameter was modified to "2.5 or greater".

Claim 1 of auxiliary request 2 corresponded to claim 1 of auxiliary request 1 in which the soluble pectin is defined as "an in situ soluble pectin component comprising readily water soluble pectin;".

Claim 1 of auxiliary request 3 corresponded to claim 1 of auxiliary request 2 in which the composition has "a water binding capacity of 14 g/g to 27 g/g".

Claim 1 of auxiliary request 4 corresponded to claim 1 of auxiliary request 3 "wherein the in situ soluble pectin component is present in an amount of 35% to 45% by weight of the activated pectin-containing biomass composition".

Claim 1 of auxiliary request 5 corresponded to claim 1 of auxiliary request 4 with "an apparent viscosity from 250 mPa•s to 3500 mPa•s when measured in aqueous solution at a temperature of 25 degrees Celsius and pH 4.0 using a Brookfield Viscometer".

Claim 1 of auxiliary request 6 corresponded to claim 1 of auxiliary request 3 in which the range defining the water binding capacity was amended to "18 g/g to 27 g/g".

Claim 1 of auxiliary request 7 corresponded to claim 1 of auxiliary request 4 in which the range defining the water binding capacity was amended to "18 g/g to 27 g/g".

Claim 1 of auxiliary request 8 corresponded to claim 1 of auxiliary request 5 in which the range defining the water binding capacity was amended to "18 g/g to 27 g/g" and the range defining the apparent viscosity was amended to "500 mPa•s to 3500 mPa•s".

Claim 1 of auxiliary request 9 corresponded to claim 1 of auxiliary request 1 in which the composition has "a water binding capacity of 14 g/g to 27 g/g".

Claim 1 of auxiliary request 10 corresponded to claim 1 of auxiliary request 9 "wherein the soluble pectin component is present in an amount of 35% to 45% by

weight of the activated pectin-containing biomass composition".

Claim 1 of auxiliary request 11 corresponded to claim 1 of auxiliary request 10 with "an apparent viscosity from 250 mPa•s to 3500 mPa•s when measured in aqueous solution at a temperature of 25 degrees Celsius and pH 4.0 using a Brookfield Viscometer".

Claim 1 of auxiliary request 12 corresponded to claim 1 of auxiliary request 9 in which the range defining the water binding capacity was amended to "18 g/g to 27 g/g".

Claim 1 of auxiliary request 13 corresponded to claim 1 of auxiliary request 10 in which the range defining the water binding capacity was amended to "18 g/g to 27 g/g".

Claim 1 of auxiliary request 14 corresponded to claim 1 of auxiliary request 11 in which the range defining the water binding capacity was amended to "18 g/g to 27 g/g" and the range defining the apparent viscosity was amended to "500 mPa•s to 3500 mPa•s".

Auxiliary requests 3A, 4A, 5A, 9A, 10A and 11A correspond to auxiliary requests 3, 4, 5, 9, 10 and 11 in which the limitation relative to the water binding capacity in claim 5 of auxiliary requests 3 and 9 or claim 4 of auxiliary requests 4, 5, 10 and 11 was deleted.

IX. The parties' submissions, in so far as they are pertinent, may be derived from the reasons for the decision below. The disputed points concerned the novelty and inventive step of granted claim 1 and

claim 1 of auxiliary request 1 over D2 and the procedural status of auxiliary requests 2-14.

Reasons for the Decision

Main request (claims as granted)

1. Novelty over D2
 - 1.1 The opposition division concluded that granted claim 1 lacked novelty in view of example 1 of D2 (column 7, line 39 to column 8, line 65). This example describes the treatment of citrus peel biomass with nitric acid and isopropanol. The coil overlap parameter of the resulting activated pectin-containing composition is not explicitly disclosed in D2.
 - 1.2 The opposition division considered that the evidence provided in D15, D15A and D16 showed that compositions obtained according to example 1 of D2 had a coil overlap parameter of 2 or greater, as defined in granted claim 1. Although D10 and D14 suggested that the content of commercially available citrus fruits had changed over the years, this was not sufficient evidence to cast doubt on the values determined in D15 and D15A (decision, point 13.1 of the reasons).
 - 1.3 The patent proprietor contested the decision under appeal and argued that the quality of citrus peel used at the time of D2 differed substantially from that available at the time of the reworking of the examples of D2 many years later (statement of grounds of appeal, pages 9-12). The patent proprietor cited D10, D14A and D15A in support of their argument.

- 1.3.1 The argument of the patent proprietor is relevant to the decisive question on novelty, namely whether the composition of example 1 of D2 has *implicitly* a coil overlap parameter according to claim 1. This is due to the fact that the coil overlap parameter is directly related to the quality of pectin via the intrinsic viscosity (patent in suit, paragraph 16) in view of the following definition:

$$\text{Coil Overlap Parameter} = IV_{\text{pectin}} \times \text{Pectin Recovery}$$

It must therefore be established whether on account of the explicit disclosure in document D2 the skilled person would understand that a composition with a coil overlap parameter according to claim 1 is the inevitable result of carrying out example 1 of D2.

- 1.3.2 Since the quality of the pectin extracted from the pectin containing biomass composition is in a direct relationship with the quality of the pectin initially present in the citrus fruit, the information on the generally accepted, known quality of pectin in citrus fruits over the years has a direct influence on the coil overlap parameter and its range as defined in operative claim 1.
- 1.3.3 D10 is a statement by Mr. Staunstrup, one of the inventors of the patent in suit. D10 was considered by the patent proprietor to represent the well-known common general knowledge in the field (statement of grounds of appeal, page 9, last paragraph to page 11, first two lines). This was not contested by the opponent. Also the Board does not see any reason to doubt that the teaching of D10 can be seen as representing the common general knowledge in the field of citrus fruits and pectin. D10 teaches that pectin

quantity and quality in citrus fruits are highly variable, depending on factors such as species, variety, country of origin, harvest timing, and post-harvest processing conditions. D10 underscores that biological, environmental, and handling factors collectively determine the final pectin content and quality.

- 1.3.4 D14A reports data of a quality analysis of pectin in commercially available lemon and orange peel between 2001 and 2020/2022. D14A teaches that orange and lemon peel were commercially available from over 20 different supplier, predominantly in Latin America but also in southern Europe. Each batch of dry peel received as raw material was subjected to a pilot plant extraction to evaluate pectin content (yield) and quality (SAG or intrinsic viscosity, IV). The data obtained over the period of 2001 and 2020/2022 confirm the argument of the patent proprietor that peel quality has changed over the years, as seen by the sustained increase in intrinsic viscosity of extracted lemon pectin between 2001 and 2022 (intrinsic viscosity of 4.6 in 2001 and 5.49 in 2022).
- 1.3.5 While additional evidence provided by both the patent proprietor (D15A) and the opponent (D16) show that with peels of good quality (i.e. high intrinsic viscosity), made available in the years 2021 and 2022, a coil overlap parameter of 2 and greater might have been obtainable (D15A discloses values of between 2 and 3.8 and D16 values of 2.65 to 3.83), the information contained in D10 and D14A shows that there are reasonable doubts as to whether citrus peels available in 1996, i.e. with intrinsic viscosities possibly even lower than those measured in 2001 in D14A, would have necessarily had a coil overlap parameter above 2. In

view of the evidence made available by the parties in appeal, the Board finds that it cannot be concluded that the inevitable result of carrying out example 1 of D2 at the time of the disclosure was a composition with a coil overlap parameter according to claim 1. On that basis the Board cannot follow the conclusion of the opposition division and acknowledges that the subject-matter of operative claim 1 is novel over the disclosure of example 1 of D2.

2. Inventive step over D2

2.1 The opposition division considered that D2 represented the closest prior art for claim 1 of auxiliary request 1 (decision under appeal, section 14.3). Both parties acknowledged at the oral proceedings before the Board that D2, and in particular its example 1, could also be seen as the closest prior art for granted claim 1. The Board has no reason to be of a different view.

2.2 Once novelty is acknowledged, it was undisputed that the composition of granted claim 1 differs from the one of example 1 of D2 disclosing a biomass composition which was activated (column 5, line 40) and contained pectin (column 7, lines 25-35 and column 8, lines 31 and 32) in that it has a coil overlap parameter as defined in paragraph 16 of the patent in suit of 2 or greater.

2.3 The evidence laid out by both parties (D15A and D16) suggests that biomass compositions from commercially available citrus fruits from 2021 and 2022 (in D15A) up to 2023 (D16 is dated from 2023) that were activated according to the process disclosed in example 1 of D2 have a coil overlap parameter of between 2 (which is the minimum value obtained on lemon peels by the patent

proprietor on page 2 of D15A for a composition according to D2) and 3.83 (obtained on orange peels by the opponent on page 4 of D16). While the data contained in D15A and D16 do not bring a definitive answer as to whether the activated biomass composition according to example 1 of D2 on citrus peels available in 1996 would have also necessarily been in the range of 2 or greater, it can nevertheless be concluded from D14A showing historical data concerning the yield (or pectin recovery), IV (intrinsic viscosity) and coil overlap parameter values (resulting from a specific activation process disclosed on page 1 of D14A), which all show a moderate increase in value, that the coil overlap parameter according to example 1 of D2 would in any case not be far from the value of 2.

2.4 With regard to the meaning and relevance of the distinguishing feature, both parties acknowledged in their argumentation that an improved quantity and quality of the soluble pectin within a biomass composition corresponded to higher amounts of extracted pectin (or higher pectin yield) and a higher intrinsic viscosity of the extracted pectin (letter of the patent proprietor of 17 March 2026, page 20, first full paragraph and rejoinder of the opponent, page 10, last paragraph).

2.5 In this respect, the patent proprietor submitted in writing that the selection of the coil overlap parameter was linked to an improvement of the functionality of the biomass composition which corresponded to an improvement in the quantity and quality of the soluble pectin within the biomass compositions, as discussed in paragraphs 15 and 16 of the patent in suit (letter of 17 March 2026, section 5, page 20). Acknowledging that a higher value of the

product did not imply that both terms of the product were higher, the patent proprietor specified at the oral proceedings before the Board that by improvement in functionality they referred to reaching an acceptable compromise between a high intrinsic viscosity and high yield for the extracted pectin. The formulation of the problem by the patent proprietor is in line with the teaching provided in paragraph 8 of the patent in suit as it suggests that using harsher extracting conditions to raise the extraction yield of the pectin in a biomass composition is known to cause a degradation of the quality of the extracted pectin measured as intrinsic viscosity. There is no other definition of the wording "improved functionality" in the patent in suit nor was it shown that it implied that the pectin had any other specific structural characteristics or that the activated pectin-containing biomass composition containing that pectin had any other improved property over the closest prior art.

2.6 On that basis and in view of the acknowledged (slight) difference and the definition of the coil overlap parameter, the technical problem starting from the composition of example 1 of D2 can be seen as the provision of an activated pectin-containing biomass composition with an acceptable compromise of quality and quantity of the pectin.

2.7 It is apparent from the definition of the coil overlap parameter given in paragraph 16 of the patent in suit (Coil Overlap Parameter = $IV_{\text{pectin}} \times \text{Pectin Recovery}$) that achieving an acceptable compromise between pectin yield (or recovery) and quality of the pectin as measured by its intrinsic viscosity is not anything else than aiming at an activated pectin-containing biomass composition with the highest possible coil

overlap parameter. Selecting citrus fruits with a peel of good quality is known from common general knowledge reflected in D10 where it is already taught that pectin quantity and quality in citrus fruits are highly variable, depending on factors such as species, variety, country of origin, harvest timing, and post-harvest processing conditions. D10 already underlines that by selecting the biological, environmental, and handling factors appropriately, pectin content and quality can be optimised. In view of this, the provision of an activated pectin-containing biomass composition with an acceptable compromise of quality and quantity of the pectin is a matter of selection of the ad-hoc citrus fruit peels, which is considered by the Board as a routine measure for the person skilled in the field.

- 2.8 There is no evidence on file showing that the coil overlap parameter threshold of "2 or greater" is anything special to the biomass compositions. In fact, D15A from the patent proprietor and D16 from the opponent show that that threshold is met by most selected peels in 2021/2022 and there is no evidence that this would have been different at the earliest priority date of the patent in suit, namely in 2017.
- 2.9 The patent proprietor additionally argued that the activation method disclosed in the patent in suit differed from the treatment performed in example 1 of D2 and that the activation method was key in obtaining the claimed coil overlap parameter. The relevance of these differences of treatment on the obtained composition remained unproven in appeal in particular in view of the data in D15A and D16 where the method of example 1 of D2 was applied. Besides, granted claim 1 only requires an activation of the pectin-containing

biomass composition and is not limited by any detail of the steps involved in the activation. In the absence of evidence that differences in the activation process over the closest prior art are necessary to achieve a coil overlap parameter of 2 or greater, they cannot be taken into account when assessing the obviousness of the solution.

- 2.10 The Board therefore comes to the conclusion that granted claim 1 lacks an inventive step over example 1 of D2.

Auxiliary request 1

3. Inventive step over D2

- 3.1 Claim 1 of auxiliary request 1 differs from granted claim 1 in that the range of coil overlap parameter was amended to "2.5 or greater". The patent proprietor submitted that that amendment created some additional distance with respect to D2 and that the arguments submitted for inventive step of claim 1 of the main request were even stronger when applied to claim 1 of auxiliary request 1.
- 3.2 The limitation of the range of coil overlap parameter in claim 1 from "2 or greater" to "2.5 or greater" was not shown to result in any further effect. The problem formulated for the main request therefore remains the same for auxiliary request 1, namely the provision of an activated pectin-containing biomass composition with an acceptable compromise of quality and quantity of the pectin.
- 3.3 It was not shown that the threshold of "2.5 or greater" added anything special to the composition, nor that

there were any technical difficulties in the method of producing it, especially since both D15A and D16 disclose measurements of coil overlap parameter on activated biomass compositions that are very close (D15A: coil overlap according to CPK of 2.4) or well above (D16: 2.83 to 3.83) the threshold of 2.5 when repeating example 1 of D2 with peels of good quality. On that basis, the Board concludes that the reasoning and conclusion on the lack of inventive step outlined above for the main request equally apply to claim 1 of auxiliary request 1.

Auxiliary requests 2-14

4. Admittance

4.1 Auxiliary requests 2-14 were filed by the patent proprietor with the reply to the opponents' statement of grounds of appeal and correspond to auxiliary requests filed already during the opposition proceedings with letter of 5 October 2023, which was the final date for making written submissions according to Rule 116 EPC.

In appeal, the opponent contested the admittance of auxiliary requests 2-14 (letter of 27 November 2024, sections 1 and 2) and submitted that these auxiliary requests should have been filed with the statement of grounds of appeal in view of Article 12(3) RPBA and were divergent.

4.2 Article 12(3) RPBA prescribes that the statement of grounds of appeal and the reply shall contain a party's complete case. Thus, both to the statement of grounds and the reply thereto are to be considered for the purposes of Article 12(3) RPBA, which in case of a

cross-appeal includes for both parties their statement of grounds and the reply to the statement of the opposing party. On this basis the first argument of the opponent is not convincing.

It is however correct to say that, since the object of appeal proceedings is the decision under appeal (Article 12(2) RPBA), auxiliary requests submitted during the opposition proceedings but not decided upon, not even as regards their admittance, do not automatically form part of the appeal proceedings. If such auxiliary requests are re-filed in appeal, they are regarded as an amendment, unless the patent proprietor demonstrates that they were admissibly raised and maintained in the proceedings leading to the decision under appeal. Otherwise they may be admitted into the proceedings only at the discretion of the board (Article 12(4) RPBA).

- 4.3 It is apparent and not contested that auxiliary requests 2-14, which were maintained throughout the opposition proceedings (decision, point 12, last sentence), contain the same amendments already present in auxiliary requests 2-14 filed with the reply to the notice of opposition with a single additional amendment in claim 1 of auxiliary requests 2 to 8 (specifying that the pectin component is an "in situ soluble pectin component comprising readily water soluble pectin", additions underlined) consistent with the arguments previously provided by the patent proprietor and in reply to what they considered as a broad interpretation of the claim by the opposition division in the annex to the summons to oral proceedings. It is also apparent that auxiliary requests 2-14 were filed in opposition as a legitimate attempt to address different objections, including new objections under Article

123(2) and 123(3) EPC raised by the opponent in their letter of 1 March 2023 against the auxiliary requests filed with the reply to the notice of opposition, which justifies a partial divergence of the requests. Moreover, the opponent's new objections were followed by the opposition division in its preliminary opinion, so that also for this reason the Board concurs with the patent proprietor that it did not have reasons to file these auxiliary requests earlier in the proceedings.

4.4 Admittance of auxiliary requests 2-14 need not be decided by the opposition division, since a higher ranking request was found to meet the requirements of the EPC. It should be established whether the opposition division had the discretion to not admit these requests and, if so, how that discretion should have been exercised if a decision on admittance had been required. Taking the above into account, in particular the filing of these requests as a legitimate reaction to the course of proceedings, the Board sees no reason to believe that the opposition division would have refused to admit auxiliary requests 2-14. In particular, as regards the timing of filing of those requests, it could be expected that the opposition division would have considered admittance of auxiliary requests 2-14 in the same manner as that of auxiliary request 1, which was filed at the same time as auxiliary requests 2-14, was admitted and decided upon by the opposition division, and whose admittance was neither objected to by the opponent, nor put in question by the opposition division.

4.5 On that basis, it is considered that auxiliary requests 2-14 were admissibly raised and maintained throughout the opposition proceedings. Under Article 12(4) RPBA, first sentence, they are therefore not an amendment of

the party's case and the Board has no discretion not to admit them. As a consequence, auxiliary requests 2-14 are in the proceedings.

5. Remittal

5.1 Auxiliary requests 2-14 submitted during the opposition proceedings have not been decided upon by the opposition division. The parties were either in favour of remitting the case, or did not object to a remittal (minutes of the oral proceedings, page 4, second and third paragraph).

5.2 In accordance with Article 11 RPBA, the board should not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so. Furthermore, in accordance with Article 111(1), second sentence, EPC, the Board of Appeal may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution. A board should not normally remit a case if it can decide all the issues without undue burden, see Article 11 RPBA and in particular Case Law of the Boards of Appeal of the EPO, 11th edition 2025, V.A.9.1.2.

Since these requests introduce substantial amendments in claim 1 that constitute a fresh case, it would be an undue burden for the Board to decide for the first time on the new subject-matter. This amounts to special circumstances justifying remittal of the case to the opposition division for further prosecution (Article 11 RPBA). For the same reason, upon remittal there would be no preclusion for the opposition division to decide on the new subject-matter. Accordingly, as the remittal

is for further prosecution, there is no need for the Board to decide on any other issue.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division for further prosecution.

The Registrar:

The Chairman:



N. Schneider

D. Semino

Decision electronically authenticated