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**Datasheet for the decision
of 28 May 2019**

Case Number: T 1598/15 - 3.3.09

Application Number: 08743825.5

Publication Number: 2124647

IPC: A23L2/56, A23L2/60, A23L2/68,
A23L1/236, A23L2/385

Language of the proceedings: EN

Title of invention:

BEVERAGE PRODUCTS HAVING STEVIOL GLYCOSIDES AND AT LEAST ONE
ACID

Patent Proprietor:

The Concentrate Manufacturing Company of Ireland

Opponent:

The Coca-Cola Company

Headword:

Relevant legal provisions:

EPC Art. 100 (a), 100 (b)
RPBA Art. 12 (4)

Keyword:

Main request : allowable [sufficiency (yes), novelty (yes),
inventive step (yes)]

Additional technical evidence : inadmissible

Decisions cited:

T 0281/86

Catchword:



Beschwerdekammern

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Case Number: T 1598/15 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 28 May 2019

Appellant:

(Opponent)

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Respondent:

(Patent Proprietor)

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Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted on
12 May 2015 concerning maintenance of the
European Patent No. 2124647 in amended form.**

Composition of the Board:

Chairman

W. Sieber

Members:

N. Perakis

D. Prietzel-Funk

Summary of Facts and Submissions

- I. This decision concerns the appeal filed by the opponent against the opposition division's interlocutory decision that European patent No. 2 124 647 as amended meets the requirements of the EPC.
- II. In the notice of opposition, the opponent requested the revocation of the patent in its entirety on the grounds of Article 100(a) (lack of novelty and lack of inventive step) and 100(b) EPC.

The documents cited in opposition included:

D2: JP 09194370 A (patent abstracts of Japan);

D3: Affidavit of Indra Prakash dated 1 December 2011;

D3a: Technical report dated 26 October 2011;

D4: Technical report dated 30 November 2011;

D4a: Technical report dated 20 January 2013;

D7: JP 1998150958 A with English translation;

D7a: (improved) English translation of D7;

D7b: Database extract as to Rebaudio A9-90,
<http://ww.morita-kagaku-kogyo.co.jp/a9.htm>
of 26 December 2011;

D7c: Technical report dated 17 January 2013;

D9: US 2002/0197371 A1;

D10: JP 1998136952 A with English translation;

D10b: (improved) English Translation of D10;

D10c: Technical report dated 18 January 2013; and

D19: Declaration of Thomas D. Lee dated
10 February 2015.

In this decision, reference will be made to D7a and D10b, which are English translations of D7 and D10, respectively.

III. The opposition division decided that claims 1 to 14 of the main request submitted during the oral proceedings of 24 March 2015 fulfilled the requirements of the EPC. Claims 1 to 14 of this request correspond to granted claims 1 to 13 and 15.

Claim 1 of the main request reads as follows:

"1. A beverage product comprising at least one steviol glycoside, erythritol, and at least one acid, wherein the beverage has a titratable acidity of no less than 8.75, and a titratable acidity of no greater than 11, and wherein the beverage has a pH no less than 2.8, and a pH no greater than 3.3, and preferably the beverage has a titratable acidity of about 9 to 11, and wherein the beverage has a pH of about 2.8 to about 3.1."

IV. The interlocutory decision was appealed by the opponent (in the following: the appellant), which requested that the decision be set aside and that the patent be revoked in its entirety. The appellant filed the following documents with the statement setting out the

grounds of appeal and requested them to be admitted into the proceedings:

D7d: Technical report headed "Reproduction of the Japanese Patent "D7"-Report";

D10d: Technical report headed "Reproduction of the Japanese Patent "D10"-Report";

D21: Wilhelm Horn, "Geschmackssinn des Menschen, ein Beitrag zur Physiologie desselben", Heidelberg, Neue Akademische Buchhandlung von Carl Groß, 1825, pages 83-90.

- V. By letter dated 26 January 2016, the patent proprietor (in the following: the respondent) requested that the appeal be rejected as inadmissible, or, if deemed admissible, that the appeal be rejected and that documents D7d, D10d and D21 not be admitted into the proceedings. The respondent also requested that the case be remitted to the opposition division, with subsequent apportionment of costs, should these documents be admitted into the proceedings.
- VI. By letter dated 15 August 2017, the appellant provided arguments with regard to: (i) the admissibility of the appeal; (ii) the admission of D7d, D10d and D21; (iii) the sufficiency of the claimed invention; and (iv) the novelty and the inventive step of the claimed subject-matter.
- VII. By letter dated 28 March 2019, the respondent filed auxiliary requests 1 and 2.
- VIII. On 8 May 2019 the board issued a communication in preparation for the oral proceedings.

- IX. By letter dated 13 May 2019, the respondent submitted further arguments regarding the remittal of the case to the opposition division.
- X. On 28 May 2019 oral proceedings were held before the board. The respondent confirmed that it no longer objected to the admissibility of the appeal. The appellant no longer pursued its novelty objection based on the disclosure of D2. The discussion during the oral proceedings focused on the patentability of the appellant's main request, i.e. the claims upheld by the opposition division.
- XI. The relevant arguments put forward by the appellant in its written submissions and during the oral proceedings with regard to the main request may be summarised as follows:

Sufficiency of disclosure

Example 1 of the patent in suit showed that despite a reduction of the amount of phosphoric acid in a given beverage formula, the pH remained constant. The reproduction of example 1 (see D3a, D4 and D4a) showed that the disclosed pH and titratable acidity could not be obtained. It was impossible to keep the pH constant when reducing the amount of the acid.

Furthermore, the invention was not sufficiently disclosed across the entire scope of claim 1 since only one steviol glycoside (rebaudioside A) and one type of acid mixture (citric acid and phosphoric acid) were exemplified. Since acetic acid would not be appropriate for a beverage, it was more than obvious to the skilled person that not any acid could be used.

Admission of D7d, D10d and D21

D7d and D10d should be admitted into the proceedings. They were filed with the grounds of appeal, i.e. at the earliest possible date, to overcome the objection of the opposition division that the relevant experimental conditions of D7a and D10b had not been reproduced diligently in D7c and D10c.

D21 should be admitted into the proceedings because it disclosed the common general knowledge of the skilled person at the priority date of the patent in suit concerning the taste of phosphoric acid.

Novelty

The subject-matter of claim 1 lacked novelty in view of D7a (example 16) and D10b (paragraph [0013]). Although these documents did not disclose the titratable acidity of the exemplified beverages, technical reports D7d and D10d, which reproduced examples of D7a and D10b more strictly than D7c and D10c, showed that these beverages inherently had a titratable acidity falling within the claimed range.

Inventive step

Even if the subject-matter of claim 1 were considered to be novel over D7a, it would not involve any inventive step over D7a as the closest prior art. The distinguishing feature, which was the titratable acidity, did not provide any technical effect. Thus, the technical problem was the provision of another/an alternative beverage having desirable taste. The skilled person looking for such a beverage would

obviously have varied the titratable acidity of the beverage and would have arrived at the claimed range without the exercise of an inventive step. It was common general knowledge at the priority date of the patent in suit that the taste of a beverage might be altered by altering the content of taste-relevant ingredients such as acids (see D21). This was exactly what the respondent did in example 1 of the patent in suit by varying the amount of phosphoric acid.

XII. The relevant arguments put forward by the respondent in its written submissions and during the oral proceedings with regard to the main request may be summarised as follows:

Sufficiency of disclosure

The patent in suit provided sufficient guidance to the skilled person intending to manufacture the claimed beverage. The skilled person would have been aware of the fact that by using a buffer system one would be able to vary the titratable acidity while maintaining the pH at a certain value (see D19). Furthermore, a skilled person with a mind willing to understand would not have considered acetic acid as an appropriate acid for carrying out the claimed invention.

As to the formulations of example 1, it was not clear why the appellant was unable to reproduce them in D3a, D4 and D4a. This might be due to the different experimental conditions used when reworking these formulations.

Beside example 1, the patent in suit comprised further examples and exemplified six beverage formulations in total according to the claimed invention. The appellant

did not object to the sufficiency of disclosure of the other examples.

Furthermore, according to the case law of the boards of appeal of the EPO (T 281/86), there is no requirement under Article 83 EPC according to which a specific example of a process has to be exactly repeatable provided that the process *per se* reliably leads to the desired product.

Admission of D7d, D10d and D21

Late-filed evidence D7d and D10d should not be admitted into the proceedings under Article 12(4) RPBA because it could have been filed before the opposition division. It should also not be admitted because it was not accompanied by any information explaining by whom and when this technical evidence had been carried out, what the experimental set up was and which devices were used.

D21 should not be admitted into the proceedings because it did not disclose the common general knowledge at the priority date of the patent in suit.

Novelty

The subject-matter of claim 1 was novel over D7a and D10b. D7d and D10d were late filed and thus inadmissible and thus it had not been shown that the beverages exemplified in D7a and D10b inherently had a titratable acidity falling within the claimed range.

Inventive step

The subject-matter of claim 1 involved an inventive step. The claimed beverage differed from the beverage exemplified in D7a as far as the titratable acidity was concerned. The technical problem in view of D7a was the improvement in taste with respect to bitterness and tartness. The skilled person would not have found in the state of the art that the technical problem could be solved by controlling the titratable acidity so that it varied within the claimed range.

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

The appellant requested that the decision under appeal be set aside and that the patent be revoked in its entirety. It also requested that D7d, D10d and D21 be admitted into the proceedings.

The respondent requested that the appeal be dismissed or alternatively, that the patent be maintained on the basis of the claims of auxiliary request 1 or 2 filed with the letter dated 28 March 2019. It also requested that D7d, D10d and D21 not be admitted into the proceedings and, if admitted, that the case be remitted to the opposition division.

Reasons for the Decision

1. Sufficiency of disclosure

1.1 The invention underlying the subject-matter of claim 1 concerns a beverage product containing at least one steviol glycoside and erythritol as sweetener. The beverage has a certain titratable acidity and a certain

pH. A definition of a beverage product is provided in paragraph [0015] of the patent in suit. Paragraph [0017] informs about the basic ingredient of the beverage products, namely water, paragraph [0018] about the steviol glycoside, paragraph [0019] about the at least one acid, and paragraph [0021] about the amount of the acid to achieve the required pH. A definition of titratable acidity is provided in paragraph [0020]. Furthermore, the patent in suit contains examples of beverage formulations falling within the scope of claim 1 which, on the one hand, include the ingredients of the claimed beverage and, on the other hand, show the claimed pH and the claimed titratable acidity. Thus, the skilled person would find in the patent in suit the necessary guidance enabling them to carry out the claimed invention without undue burden, taking common general knowledge also into consideration.

1.2 The appellant contested sufficiency of disclosure in view of example 1 of the patent in suit. Example 1 discloses a beverage formula containing varying amounts of phosphoric acid. However, despite a reduction of the amount of phosphoric acid, the pH of the three formulas remained constant. The appellant's reproduction of example 1 (D3a, D4/D4a) showed that the pH and titratable acidity as disclosed in the patent could not be obtained. In fact, it was impossible to keep the pH constant while decreasing the amount of phosphoric acid.

1.3 It is not immediately evident to the board why the appellant was not in a position to repeat example 1 of the patent. The respondent was critical of the appellant for not strictly following the disclosed experimental procedure. Furthermore, the respondent explained with reference to D19 that in the

formulations of example 1 a buffer system was created in view of the presence of sodium benzoate and sodium citrate, which allowed the variation of the titratable acidity without changing the pH. Moreover, the respondent observed that in D3a, although the reworking of formulation 2 led to values of pH and titratable acidity different from those of formulation 2 of example 1, these values were within the claimed range (pH: 3.3 and titratable acidity: 9.56). Taking this into account, there appears to be contradictory evidence, and the board is unable to see why one set of experiments should be more credible than the other. In the present situation, the board agrees with the opposition division (Reasons, point 4, last paragraph) that the benefit of the doubt has to be given to the respondent/patent proprietor.

- 1.4 In this context, the board notes that the experimental part of the patent in suit is not limited to example 1 with its three formulations. There are further formulations disclosed in examples 2 and 4 according to the claimed invention, namely formulations 1 and 2 of example 2 and formulations 1 and 2 of example 4. The appellant did not raise any objection of insufficient disclosure with regard to these formulations.

The respondent's reference to T 281/86 in this context, appears not to be relevant in the present case. This decision relates to a case where an example of a process is not exactly repeatable but nevertheless leads to the same ultimate result (Reasons, points 5 and 6). In contrast to T 281/86, the reworking of example 1 in D3a and D4/D4a does not provide the same ultimate result as regards pH and titratable acidity.

1.5 The appellant further argued that the invention could not be performed over the whole claimed range. In particular, only one steviol glycoside, namely rebaudioside A, and only one acid mixture, namely citric acid and phosphoric acid, are exemplified in the patent in suit. However, it is the appellant who bore the burden of proof in these proceedings and who had to substantiate its allegations. In the absence of any substantiation, this allegation is rejected.

1.6 The appellant also argued that the invention would not work with acetic acid because it was commonly known that acetic acid was not appropriate in beverage products. If, however, it was commonly known that acetic acid was not appropriate, then the skilled person would not consider the use of acetic acid in the claimed invention.

1.7 In view of the above, the board comes to the conclusion that the invention underlying the subject-matter of claim 1 of the main request is disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

2. Admission of D7d, D10d and D21

2.1 D7d and D10d relate to experiments undertaken to reproduce example 16 of D7a and the experiment described in paragraph [0013] of D10b in order to show that these beverages implicitly had titratable acidity values falling within the claimed range. D7d and D10d were filed with the statement setting out the grounds of appeal in reaction to the opposition division's criticism that the previously filed technical evidence D7c and D10c did not strictly follow the teachings of D7a and D10b, respectively.

The respondent objected to the admission of these documents in its reply to the grounds of appeal (letter dated 26 January 2016: page 13, third paragraph) because these documents were silent as to the "where", "when" and "by whom" the experiments of D7d and D10d had been carried out. The appellant was aware of this objection but did not provide further information either in the written proceedings or during the oral proceedings.

Therefore, the board decided not to admit these documents into the proceedings (Article 13(1) RPBA).

2.2 As regards D21, it is an extract from a book published in 1825 and is considered to represent the common general knowledge of the skilled person at the priority date of the patent in suit about the taste of phosphoric acid with regard to bitterness and tartness (see table on page 85). This was eventually acknowledged by both parties.

2.3 Since D7d and D10d were not admitted into the proceedings and D21 was considered to represent the common general knowledge, the respondent's request for remittal to the opposition division became moot.

3. Novelty

3.1 According to the opposition division's decision, the subject-matter of claim 1 was novel over D2, D7a and D10b, since none of these documents disclosed a beverage product with a titratable acidity of no less than 8.75 and no greater than 11.

3.2 The appellant had filed technical reports D7c and D10c before the opposition division in order to demonstrate that the beverage compositions of example 16 of D7a and of the experiment disclosed in paragraph [13] of D10b inherently had a titratable acidity falling within the claimed range. However, the opposition division decided that D7c and D10c did not diligently reproduce the relevant experimental conditions of D7a and D10b and that verification of the allegations made by the opponent was not possible (Reasons, point 5).

3.3 As a reaction to the criticisms of the opposition division with respect to D7c and D10c, the appellant filed technical reports D7d and D10d which were, however, not admitted into the appeal proceedings. Furthermore, during the oral proceedings before the board, the appellant withdrew its novelty objection based on D2.

3.4 Since no further arguments or evidence was provided by the appellant to substantiate its novelty objections in relation to D7a and D10b, the board can only confirm the opposition division's decision that it is not directly and unambiguously derivable from the disclosure of D7a or D10b that the beverage products exemplified therein have the titratable acidity required by claim 1. Thus, the subject-matter of claim 1 of the main request is novel over these documents.

4. Inventive step

4.1 Closest prior art

4.1.1 The patent in suit concerns a beverage product comprising at least one steviol glycoside, erythritol

and at least one acid with desirable taste properties, which addresses the challenges concerning the bitterness and/or other off-tastes resulting from the use of alternative sweeteners, flavourants, flavour enhancing agents and the like in new beverage formulations (paragraphs [0004] and [0006]). A definition of taste is provided in the patent in suit (paragraph [0023]), according to which "taste" refers to a combination of sweetness perception; temporal effects of sweetness perception, i.e. onset and duration; off-tastes, e.g. bitterness and metallic taste; residual perception (aftertaste) and tactile perception, e.g. body and thickness. In example 1, the sweetness, tartness and bitterness of beverage products were evaluated (see paragraph [0045] and table 1).

4.1.2 D7a discloses acidic beverages which have a good taste and comprise a high potency sweetener, such as stevia and erythritol (page 1, claim 1 and the paragraph under "Technical Field"). According to D7a, stevia has the drawback of a lingering sweet aftertaste (page 2, lines 1-2), and erythritol has an astringent after taste (page 2, lines 10-11). In particular, example 16 discloses a beverage composition comprising water, lemon juice (and thus containing citric acid), stevia and erythritol which has a pH of 3.02 (page 9, lines 4-8 and table 4).

4.1.3 Hence, D7a not only addresses the same problem as the patent in suit (a beverage product having good taste), it also discloses a beverage product with a composition very similar to that of the beverage product of the patent in suit. Thus, D7a is considered to represent the closest prior art for the assessment of inventive step.

4.1.4 The beverage product of claim 1 of the main request differs from the beverage of example 16 of D7a only in a titratable acidity of no less than 8.75 and no greater than 11.

4.2 The technical problem and its solution

4.2.1 The technical evidence of the patent in suit (table 1: formulations 1 to 3) shows that when the titratable acidity of a beverage product lies within the claimed range (formulations 2 and 3), its taste as regards sweetness, tartness and bitterness is improved in comparison with a beverage product having a titratable acidity lying outside of the claimed range (formulation 1).

In contrast to the patent in suit, D7a does not associate the good taste of the disclosed beverage product with less tartness and bitterness. The only taste component that was assessed in the examples of D7a is sweetness (page 5, last six lines and page 7, line 2).

4.2.2 Thus, the technical problem in view of D7 is the provision of a beverage product with improved taste as regards sweetness, tartness and bitterness. The technical evidence of the patent in suit (example 1 concerning a diet cola) shows that this problem has successfully been solved. Furthermore, in the absence of any evidence filed by the appellant, it is plausible that this problem is solved by other beverage products too, and not only by a diet cola.

4.3 Obviousness

- 4.3.1 The skilled person starting from the acidic beverage of example 16 of D7a, which contains citric acid in view of the ingredient "lemon juice", and seeking to improve its taste with regard to sweetness, tartness and bitterness, would not have been motivated by D7a or any other prior-art document to control the titratable acidity of the beverage so that it would be no less than 8.75 and no greater than 11.
- 4.3.2 D7a does not make any reference to titratable acidity, thus any argument regarding the titratable acidity of the beverage of example 16, let alone its control within the claimed range, is merely a speculation or based on hindsight. Furthermore, as already mentioned above, D7a does not disclose that "taste" encompasses tartness and bitterness, and thus the skilled person would not have derived from D7a any relation between titratable acidity and these taste components, and the appellant did also not cite any document that disclosed such a relation.
- 4.3.3 The appellant merely asserted that, in view of the common general knowledge disclosed in D21, the taste improvement shown in the beverage formulations of example 1 of the patent in suit with regard to bitterness and tartness was obvious. It was known from D21 that phosphoric acid had a bitter and tart taste, so that the skilled person would have reduced the amount of phosphoric acid, an action which was taken in formulas 2 and 3 of example 1 of the patent. The board does not agree. Firstly, the appellant's approach is based on the assumption that formula 1 of example 1 in the patent is the closest prior art, which it is not. Secondly, the skilled person would not have combined the closest prior art, namely the disclosure of example 16 of D7a which concerns a beverage product

containing citric acid, with the common general knowledge disclosed in D21 relating to the taste of phosphoric acid because the example of D7a does not contain phosphoric acid. It appears that the appellant's argument is based on impermissible hindsight.

4.4 In view of the above, the subject-matter of claim 1 of the main request involves an inventive step.

5. In summary, claim 1 is patentable.

6. Dependent claims 2 to 14

Dependent claims 2 to 14 of the main request correspond to specific embodiments of independent claim 1 and are therefore patentable for the same reasons.

7. Auxiliary requests 1 and 2

Since the board has come to the conclusion that the main request is patentable, any discussion with respect to the auxiliary requests becomes redundant.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



M. Cañueto Carbajo

W. Sieber

Decision electronically authenticated