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**Datasheet for the decision
of 30 March 2023**

Case Number: T 2084/21 - 3.3.06

Application Number: 16166474.3

Publication Number: 3070154

IPC: C11B3/00, C11B3/04, C11B3/10

Language of the proceedings: EN

Title of invention:
PROCESS FOR PRODUCING REFINED VEGETABLE OIL

Patent Proprietor:
Bunge Loders Croklaan B.V.

Opponents:
Cargill, Incorporated
Upfield Europe B.V.

Headword:
Reducing 3-chloropropane-1,2-diol/Bunge Loders

Relevant legal provisions:
EPC Art. 76(1), 83, 56

Keyword:

Divisional application - subject-matter extends beyond content of earlier application - main request and auxiliary request 2 (yes)

Sufficiency of disclosure - auxiliary request 1 (no) - auxiliary request 3 (yes)

Inventive step - non-obvious alternative - auxiliary request 3

Decisions cited:

G 0002/10

Catchword:



Beschwerdekammern

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Case Number: T 2084/21 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 30 March 2023

Appellant: Cargill, Incorporated
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
14 October 2021 concerning maintenance of the
European Patent No. 3070154 in amended form.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: R. Elsässer
 J. Hoppe

Summary of Facts and Submissions

I. The appeal of opponent 1 lies from the decision of the opposition division to maintain European patent EP 3 070 154 in amended form, based on the claims of the first auxiliary request filed during the oral proceedings on 28 September 2021, claim 1 thereof reading:

"1. A process for reducing the levels of 3-chloropropane-1,2-diol and esters thereof in a vegetable oil, which comprises treating the oil with a base, wherein the oil is bleached and deodorised, the bleaching and deodorising conditions are selected to reduce the content of 3-chloropropane-1,2,-diol and esters thereof in the deodorised oil to less than 2 ppm, and deodorisation is carried out at a temperature of from 180 to 210°C, and bleaching is carried out using a natural, non-activated bleaching agent".

II. The following documents are relevant for the present decision:

D3: WO 2012/065790

D6: WO 2010/126136 and its English translation **D6a**

D8: The Lipid Handbook, 2nd edition - F. Gunstone, 1994, page 258-275

D9: JAOCS 1960, vol 37, pages 512-520

D10: Experimental report

D13: EP 2640813

D14: GB 1019639.2

D25: Franke et al, *"Influence of Chemical refining process and oil type on bound 3-chloro-1,2-propanediol contents in palm oil and rapeseed oil"*.

III. With its grounds of appeal, the appellant filed new documents **D38** (preliminary opinion of the board in appeal case T 0226/19), **D39** (WO 2011/055732 with English translation **D39a**) and **D40** (WO 2011/040539 with English translation **D40a**) and requested that the patent be revoked, *inter alia* on the grounds that the subject-matter of above claim 1 extended beyond the disclosure of the parent application **D3** (Article 76(1) EPC).

IV. With its reply, the respondent and proprietor filed five auxiliary requests and requested *inter alia* that the appeal be dismissed.

In claim 1 of the new first auxiliary request the upper limit of the temperature range for deodorisation has been amended to 200°C.

Claim 1 of the second auxiliary request is based on the main request whereby the term "a base" has been replaced with the term "sodium methoxide".

Claim 1 of the third auxiliary request combines the amendments of the first and second auxiliary requests.

V. In a further submission, the appellant argued that **D10** provided evidence that the invention as defined in the new first auxiliary request was not sufficiently disclosed (Article 83 EPC). The second auxiliary request contravened the requirements of Article 76(1) EPC and claim 1 of the third auxiliary request was neither inventive in view of **D6** or **D25** as closest prior art nor sufficiently disclosed.

VI. After having received the preliminary opinion of the board, the party as of right and opponent 2 announced that they would not attend the oral proceedings and

stated that they maintained their requests. However, the board notes that no request had been made in these appeal proceedings.

VII. The appellant filed **D41** (extract of "Lehrbuch der Lebensmittelchemie", Belitz et. al.) as evidence of the common general knowledge that treating vegetable oil with sodium methoxide was standard in the art, and it argued that in view of **D41** and starting from **D6** or **D25**, the subject-matter of claim 1 of auxiliary request 3 was obvious. Further it requested not to admit auxiliary requests 1-3 into the proceedings.

VIII. In a further submission, the respondent argued that **D10** was unconvincing in view of **D39** so that the first auxiliary request was sufficiently disclosed.

IX. At the oral proceedings held on 30 March 2023 the final requests of the parties were as follows:

The appellant (opponent 1) requested that the decision under appeal be set aside and that the European patent be revoked.

Respondent (patent proprietor) requested that the appeal be dismissed, or, as an auxiliary measure, that the patent be maintained in amended form based on the claims of one of auxiliary requests 1-5 filed with the reply to the appeal.

X. In the following, the abbreviation 3-MCPD is used for 3-chloropropane-1,2-diol.

Reasons for the Decision

1. Main request (claims found allowable in first instance)

In the board's view, this request is not allowable because the subject-matter of its claim 1 does not meet the requirement of Article 76(1) EPC.

1.1 The contested patent stems from a divisional application of the earlier application EP11779116 published as WO 2012/065790 (**D3**). According to Article 76(1) EPC the subject-matter of the patent must not extend beyond the content of the earlier application. The relevant question in this context is what a skilled person can derive directly and unambiguously from the whole content of the document as filed. According to the jurisprudence, this is known as the gold standard (see G 2/10, Reasons 4.3).

1.2 Concerning the deodorisation temperature, two generally applicable ranges are disclosed on page 2, paragraph 5, one preferred (180 to 255°C) and one more preferred (200 to 250°C). However, neither the claimed range nor the value of 210°C is mentioned in the general part of the description. This value is disclosed as the upper limit of a range disclosed only in example 2 of the earlier application, but according to the case law, a working example normally represents a specific embodiment of the invention and any value disclosed in the specific context of said embodiment can only be generalised and thereby isolated from the other features if the skilled reader would have derived from the application as a whole that there is no structural and functional relationship between said value and the other features of the example (Case law of the Boards of Appeal, 10th edition, II.E. 1.9.1). But in the

present case, example 2 is not even covered by the claimed subject-matter, which is another reason why features from this example cannot be invoked in support of claim 1.

- 1.3 The respondent argued that section II.E.1.5.2 of the Case Law Book, which deals with cases where a range is formed with an isolated value taken from an example, was more relevant for the present case.
- 1.4 In the board's view, the principle recited in said section, namely that such an amendment is admissible if "the skilled person could have readily recognised that this value was not so closely associated with the other features of the example (...)" is more or less equivalent to the principle recited in point 1.2 above, which is not surprising, since both principles represent specific formulations of the general principle of the gold standard mentioned above.
- 1.5 The question whether or not such a functional relationship or a close association with the other features exists has to be decided on a case by case basis.
 - 1.5.1 In the case at issue, example 2 is a process that involves a specific starting material having a content of 3-MCPD of more than 10 ppm as well as specific process conditions which all contribute to the achievement of an oil having a specific content of 3-MCPD of 2 ppm.
 - 1.5.2 The respondent argued that the appellant had not demonstrated that the deodorisation temperature was closely associated with the other features of the example but this is not necessary in the present case,

since at least for the content of 3-MCPD, D3 itself teaches on page 4, second paragraph, that the deodorising conditions are selected to reduce the content of 3-MCPD. Hence the deodorising temperature and the content of 3-MCPD of the deodorised product are directly technically interrelated with the consequence that the deodorisation temperature in example 2 cannot be generalised, and thus cannot be incorporated into claim 1 in isolation or in combination with another value of the 3-MCPD content, as presently defined in claim 1 at issue.

1.5.3 The other argument of the respondent that the temperature range of 180-210°C being indicated in parentheses in Example 2 suggested a generally applicable definition of the expression "lower temperature" is not convincing, and the board sees no reason to attribute any particular meaning to it. In particular, this wording does not mean that the "lower temperature" defined by said range would be applicable to the invention in general. Furthermore parentheses are only used in the specific examples 2 and 4, and the overall structure of document **D3** is quite conventional with a general disclosure of the invention in the first part of the document (page 2, paragraph 5) and specific embodiments described later. Thus, there is no reason to assume that the temperature range defined in example 2 is generally applicable to the invention.

1.6 Therefore the subject-matter of claim 1 as upheld by the opposition division extends beyond the content of the earlier application and is not allowable.

2. First auxiliary request - Article 83 EPC

Irrespective of the question of its admittance, this

request is not allowable since the patent does not disclose how to carry out the thus claimed invention over the entire range claimed.

- 2.1 Claim 3 of the requests covers embodiments where sodium methoxide or sodium hydroxide is used as a base. For the invention to be sufficiently disclosed, the patent and/or common general knowledge must provide the skilled person with all information necessary to carry out both embodiments.
- 2.2 However, experimental report **D10** shows that the claimed content of 3-MCPD of less than 2 ppm cannot be achieved with sodium hydroxide as a base, since the oil obtained had a content of 3-MCPD of 12.7 ppm, and this, despite experimental conditions identical to those used in example 1 of the opposed patent, excepted that sodium hydroxide was used instead of sodium methoxide; and natural bleaching earth was used, as required by claim 1. In the absence of evidence to the contrary, the board is satisfied that this experimental set-up is a legitimate attempt to carry out the invention with sodium hydroxide as a base.
- 2.3 The respondent pointed out that **D10** was not a 1:1 repetition of example 1 because sodium hydroxide was used instead of sodium methoxide, but this is not a convincing argument since both embodiments are explicitly claimed and the appellant is free to demonstrate a lack of enablement for either one.
- 2.4 The respondent further argued that the skilled person would have known that sodium hydroxide is a much weaker base than sodium methoxide. Therefore, the approach taken in **D10**, namely simply replacing sodium methoxide with sodium hydroxide without appropriately modifying

the reaction conditions was designed to fail. A similar argument was used by the opposition division (point 22.3.3), and in order to underpin this argument, the respondent referred to various examples and comparative examples in **D39** and the patent, which showed that the skilled person would have known that the amount of base had to be significantly increased when sodium hydroxide was used instead of sodium methoxide.

- 2.5 Notwithstanding the fact that the arguments relying on **D39** were put forward for the first time after the summons to oral proceedings and thereby very late, they do not convince the board either, since **D39** is a (post published) patent document, and as such not representative of common general knowledge. Moreover the document is not referred to in the patent, so the skilled person could not have relied on its teaching when trying to carry out the invention.
- 2.6 In view of this finding, there is no need to decide on the request to admit **D39** as evidence in the context of the discussion of sufficiency of disclosure (see the reply to the appeal, point 2.2 and the respondent's submission of 19 January 2023, point 3.4).
- 2.7 Apart from **D39**, the board notes that no evidence was provided by the respondent showing that the skilled person would have known that the reaction conditions had to be modified when replacing sodium methoxide with sodium hydroxide. Since the patent itself provides no guidance in this respect but rather presents the two bases as technically equivalent (paragraph 0020), the board holds that the skilled person would have considered at least a variation of the reaction time, the reaction temperature and of the base concentration, alone or in various combinations. This however goes

beyond routine experimentation, in particular in view of the fact that the content of 3-MCPD obtained in **D10**, which would be the starting point for any optimisation, is not even close to the claimed result of less than 2 ppm. In this context, it is not appropriate to shift the burden of identifying suitable reaction conditions to the opponent because in order to satisfy the requirement of Article 83 EPC, this teaching should have been provided in the patent.

3. Second auxiliary request

Irrespective of the admittance of this request, claim 1 thereof contains the same temperature range as claim 1 of the main request and therefore fails to meet the requirements of Article 76(1) EPC for the same reasons as set out above.

4. Third auxiliary request

4.1 Admissibility

The board has exercised its discretion under Article 12(4) RPBA 2020 to admit this request into the proceedings, because it corresponds to auxiliary request 3 filed with the reply to the opposition, with granted claims 6 and 8 thereof being deleted.

The appellant argued that the request should not be admitted because the corresponding objections under Article 76(1) EPC had been filed already during the opposition proceedings so that it should have been filed earlier.

However, in the board's view, the deletion of the above mentioned claims is a legitimate reaction to the

finding of the opposition division that the claims did not meet the requirement of Article 76(1) EPC (point 17.1 of the decision), which deviated from the preliminary opinion (point 2.2.1.3 of the annex to the summons). In reaction to this change of opinion, a new first auxiliary request was filed at the oral proceedings and admitted by the opposition division. As this request was found allowable, there was no need for the proprietor to file a correspondingly amended third auxiliary request during the first instance proceedings. Under these circumstances and bearing in mind that the amendment is not complex and overcomes the objections raised while not giving rise to any new objections, the board exercised its discretion to admit said request into the proceedings.

4.2 Sufficiency of disclosure

In the board's view, the appellant has not convincingly shown that the invention defined in claim 1 cannot be carried out by the skilled person for the following reasons.

- 4.2.1 The appellant pointed out that none of the examples in the contested patent was covered by claim 1 and alleged that it was probable that in the exemplified embodiments acid-activated bleaching agents had been used because these were known to be more effective, as shown by **D8** and **D12**. Moreover, example 2 was not credible because in the corresponding example of the priority document **D14**, a 3-MCPD content of 5.5 ppm was reported instead of 2 ppm. Further it pointed out that it was not clear from examples 1 and 2 of the patent whether the 3-MCPD content was reduced by the bleaching and deodorisation conditions, or by the base treatment which, according to paragraph 0020 of the patent, also

reduces the content of 3-MCPD. Moreover the corresponding range in claim 1 was open and it was not credible that a content of 3-MCPD close to zero could be obtained.

- 4.2.2 Notwithstanding the fact that the arguments relying on **D8** and **D12** were submitted for the first time at the oral proceedings and thus very late, they are not convincing because in opposition-appeal proceedings, the burden of proof that the invention cannot be carried out usually lies with the opponent. Therefore, even if the allegations regarding the bleaching earth used in the examples (**D8**, **D12**) were correct, this would mean that the examples are not embodiments of the claimed invention, but not that the claimed invention cannot be carried out.

The same applies to the argument relying on the priority document because, even if example 2 was disregarded as not credible, this would not mean that the invention cannot be carried out.

With regard to the requirement of the invention that the content of 3-MCPD is reduced by the bleaching and deodorising conditions, the board observes that the claim does not require that the 3-MCPD content is only reduced by the selection of the deodorisation and bleaching conditions. Therefore, the fact that according to paragraph 0020 of the patent, the treatment with a base (also) reduces the content of 3-MCPD is not a reason to conclude that the invention cannot be carried out. In this context, the appellant argued that in comparison with example 1, **D10** showed that the content of 3-MCPD was reduced only by the base and not by the bleaching and deodorisation conditions. However neither the method of **D10** nor the method of

example 1 are embodiments of the invention, so that no relevant conclusions can be drawn from these experiments.

Finally the board sees no problem with the 3-MCPD content being defined by an open range as this is common in patent drafting and does not mean that the value zero must be achievable.

- 4.2.3 In the written procedure, the appellant also referred to **D38**, which is the preliminary opinion of the board in appeal case T 0226/19 concerning the patent derived from parent application (**D13**). However, being not binding even in the case it is issued, a preliminary opinion is even less relevant in another case where the claimed subject-matter is not identical.

Thus there is no need to decide on the admission of this document into the proceedings.

4.3 Inventive step

The board concluded that the appellant has not shown that the subject-matter of claim 1 was obvious for the skilled person. The reasons are as follows.

- 4.3.1 The invention is directed to a method of reducing the content of 3-MCPD in vegetable oils (paragraphs 0001-0003, claim 1 of the patent).
- 4.3.2 **D6** is an (undisputed) starting point for the assessment of inventive step since it discloses (paragraph 0001, example 3), in particular its example 3, a method that leads to vegetable oils having a low content of 3-MCPD.

- 4.3.3 It is common ground between the parties that in example 3 of D6 the oil is treated with sodium hydroxide instead of sodium methoxide. Moreover the deodorisation temperature is higher than claimed and the final 3-MCPD content is 2 ppm, instead of being less than 2 ppm as claimed.
- 4.3.4 The respondent sees a further difference in the fact that D6 does not disclose a method of reducing the content of 3-MCPD, but rather a method of inhibiting the formation of 3-MCPD, which is not the same. For the board, the question whether this distinction can be seen as a further difference between the claimed subject-matter and D6 can be left open because the conclusion that the subject-matter of claim 1 is not obvious can be reached even if this alleged difference is not considered and the problem to be solved is formulated in the least ambitious way, namely as the provision of an alternative method, as suggested by the appellant.
- 4.3.5 In fact the patent proposes to solve this problem by the method of claim 1 that includes the step of treating the oil with sodium methoxide.
- 4.3.6 The appellant argued that the skilled person knew that sodium methoxide was a base, so it was an obvious alternative for sodium hydroxide in the alkali treatment step of example 3 in **D6**. Such an arbitrary selection of a well-known alternative was not inventive. It also referred to **D8**, **D9** and **D25**.
- 4.3.7 The board notes that it is undisputed that sodium methoxide is a base, but this does not suffice for the skilled person to consider any base as a suitable alternative to the sodium hydroxide used in example 3,

because it would first take into account the alternative alkali agents disclosed in paragraph 0020 of **D6**, where hydroxides, carbonates and bicarbonates are mentioned. These compounds are furthermore all inorganic and have a basicity equal or weaker than sodium hydroxide. Based on this disclosure and without any other pointer towards it, the use of an extremely strong organic base, such as sodium methoxide, is thus not an obvious measure for the skilled person. Furthermore, as argued by the appellant itself, sodium methoxide was commonly used in interesterification reactions (submission of 18 November 2022, page 8, third paragraph), which is not the purpose of the alkali treatment of **D6**. It is correct that paragraph 0018 of the patent mentions that an interesterification may contribute to reduce the level of 3-MCPD but this information was not available to the skilled person, since disclosed in the patent itself.

As to documents **D8**, **D9** or **D25**, also mentioned by the appellant, they do not render obvious a replacement of sodium hydroxide with sodium methoxide either. Page 264 of **D8** discusses neutralisation reactions without however mentioning sodium methoxide. Page 512 of **D9** discloses that alkali treatments of oils are conventional but fails to disclose that sodium methoxide is or could be used. **D25**, page 1752, right hand column, discloses that sodium methoxide is used to liberate 3-MCPD as part of the process of determining its content by GC-MS but nothing suggests that it could be used as an alternative to sodium hydroxide in the process of producing the oil disclosed therein, let alone in the process according to **D6**.

4.3.8 It follows that replacing sodium hydroxide with sodium methoxide in the method of example 3 of **D6** was not

obvious for the skilled person.

- 4.3.9 The board notes that D25 is also a suitable starting point for the assessment of inventive step, since this document discloses (point 2.1) methods that include a step of treating vegetable oils with sodium hydroxide leading to a low content of 3-MCPD (table 3). D25 does not disclose a treatment with sodium methoxide - this was acknowledged by the appellant (item 6.2.2 of the submission of 18 November 2022), but it argued that replacing sodium hydroxide with sodium methoxide was obvious for the same reasons as set out with regard to **D6**. It also pointed out that **D25** (point 2.1) and **D9** (page 512, right column) disclosed that alkali and free fatty acids reacted to form a soap, while the same reaction is reported in example 1 of the contested patent for the reaction of sodium methoxide. This argument is however not convincing, since the contested patent is not prior art and **D9** does not mention sodium methoxide. It follows that **D25** cannot render obvious the claimed subject-matter, so that the same reasons as set out above for **D6** also apply for **D25**.
- 4.3.10 The appellant brought forward a further attack starting from **D6** or **D25** and taking into account document **D41**, which showed that it was common general knowledge that oils were frequently subjected to an interesterification step to alter and enhance the properties of the oil with sodium methoxide being used as catalyst. By subjecting the oils of example 3 of **D6** or **D25** to such a step, the skilled person would arrive at the subject-matter of claim 1.
- 4.3.11 The board observes that it has exercised its discretion not to take into account **D41** and the attack based thereon, because both were brought forward for the

first time with the submission of 18 November 2022, so that Article 13(2) RPBA 2020 applies. This stipulates that any amendment to a party's appeal case shall, in principle, not be taken into account unless there are exceptional circumstances. Such circumstances are however neither apparent to the board nor have been presented by the appellant. Claim 1 being furthermore identical to claim 1 of the third auxiliary request filed with the reply to the opposition, **D41** and any objection based thereon should thus have been filed already in the first instance. The appellant argued that **D41** represented a reaction to the board's preliminary opinion which differed from the arguments used by the opposition division or the proprietor during the first instance proceedings. This is not convincing for the board, because the filing of **D41** is not a reaction to any objection, reasoning or interpretation of the board, since **D41** instead is used in an entirely new attack not presented before. Therefore the board exercised its discretion not to take it into account.

5. **D39** and **D40** were filed in the context of attacks against the higher ranking requests that were based on the assumption that the priority was not validly claimed. As this does not apply to the third auxiliary request, there is no need to decide on their admission.

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 with the order to maintain the patent in amended form based on the claims of auxiliary request 3, filed with the reply of 1 June 2022, and a description to be adapted where appropriate.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated