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Datasheet for the decision of 17 October 2023

Case Number: T 2697/19 - 3.3.10

Application Number: 06779360.4

Publication Number: 1928990

IPC: C11C3/08, C12P7/64, A23D9/00

Language of the proceedings: EN

Title of invention:
PROCESS FOR PRODUCING DIOLEYL PALMITOYL GLYCERIDE

Patent Proprietor:
Bunge Loders Croklaan B.V.

Opponents:
Enzymotec Ltd.
AAK AB

Headword:

Relevant legal provisions:
EPC Art. 100(a), 100(b), 100(c)

Keyword:
The grounds for opposition do not preclude the maintenance of the patent as granted

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2697/19 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 17 October 2023

Appellant: (Opponent 2)	AAK AB Skrivaregatan 9 215 32 Malmo (SE)
Representative:	Hamer, Christopher K. Mathys & Squire The Shard 32 London Bridge Street London SE1 9SG (GB)
Respondent: (Patent Proprietor)	Bunge Loders Croklaan B.V. Hogeweg 1 1521 AZ Wormerveer (NL)
Representative:	Potter Clarkson Chapel Quarter Mount Street Nottingham NG1 6HQ (GB)
Party as of right: (Opponent 1)	Enzymotec Ltd. P.O. Box 6 Sagi 2000 Industrial Park 23106 Migdal Haemek (IL)
Representative:	De Vries & Metman Overschiestraat 180 1062 XK Amsterdam (NL)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 26 July 2019 rejecting the oppositions filed against European patent No. 1928990 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chair	A. Zellner
Members:	R. Pérez Carlón
	F. Blumer

Summary of Facts and Submissions

I. The appellant (opponent 2) lodged an appeal against the opposition division's decision rejecting the oppositions against European patent No. 1 928 990.

II. Two notices of opposition had been filed on the grounds of added subject-matter (Article 100(c) EPC), insufficiency of disclosure (Article 100(b) EPC), and a lack of novelty and inventive step (Article 100(a) EPC).

III. The party as of right (opponent 1) has taken no active part in the present appeal proceedings.

IV. The following documents are relevant to the present decision:

D1 EP 0 209 327 A2
D5 US 5,658,768
D8 GB 1 382 573
D9 Prepared experiments based on differing starting IVs, filed as D5 with the appellant's notice of opposition on 15 November 2017
D21 Experimental evidence filed with the appellant's grounds of appeal
D22 F. D. Gunstone, "Vegetable oils in food technology: composition, properties and uses", Blackwell Publishing, 2002
D24 GB 30604-2015: National food safety standard - Food nutritional fortification substance - 1,3-dioleoyl-2-palmitoyl triglyceride
D25 P. Adlercreutz, research outputs, Lund University, filed with the appellant's letter of 28 June 2021

D26 Equilibrium calculations for interesterification of palm oil stearin, filed by the appellant's letter dated 12 January 2023

V. Claim 1 of the patent as granted, which is the respondent's (patent proprietor's) main request, reads as follows:

"A process for the production of a composition comprising 1,3-dioleoyl-2-palmitoyl glyceride (OPO), wherein the process comprises subjecting a palm oil stearin, with an iodine value (IV) between 8 and 12 to enzymic transesterification, with oleic acid or a non-glyceride ester thereof."

VI. The opposition division concluded that claim 1 of the patent had the required basis in the application as originally filed, and that the claimed invention was sufficiently disclosed for it to be carried out by a skilled person. The claimed process was novel and document D1, which disclosed a process using palm oil stearin having an iodine value of 5.7, was considered to be the closest prior art. The problem underlying the claimed invention was to provide an alternative process for the production of a composition comprising OPO. The claimed solution, which was characterised by the IV of the starting material, would not have been obvious to a skilled person in view of the prior art and was thus inventive.

VII. The appellant's arguments were as follows:

Experimental evidence D21 and the textbook D22 had been filed with the statement of grounds of appeal and formed the basis of the appeal proceedings pursuant to Article 12(1) RPBA 2007. D26 had been filed in reply to

the respondent's arguments and was simple to grasp. For these reasons, it should be admitted into the proceedings.

The IV values set out in claim 1 did not have the required basis in the application as originally filed; the ground for opposition under Article 100(c) EPC thus precluded the maintenance of the patent as granted.

The patent's examples were not reproducible and the measurement of the OPO proportion was unreliable. The claimed invention was thus not sufficiently disclosed.

The claimed process was not novel over those disclosed in D1 and D5. Even if it were to be considered novel, D1 was the closest prior art and this document disclosed all of the features of claim 1 with the exception of the required IV value. In view of the available evidence, no improvement was linked to this distinguishing feature and the sole problem solved by the claimed invention was that of providing an alternative. The claimed solution would have been obvious to a skilled person seeking a cheaper starting material and was thus not inventive.

VIII. The respondent's arguments were as follows:

The appellant had no reason not to have filed D21 and D22 before the opposition division. D26 required exceptional circumstances for it to be admitted, yet none were provided. Thus, these documents should not be admitted into the proceedings.

Claim 1 had a basis in the combination of claim 1 as originally filed and page 5, line 13, of the description, which disclosed the lower end of the IV

range specified in claim 1.

The claimed invention was sufficiently disclosed for it to be carried out by a skilled person as proven by the evidence submitted by the appellant itself.

Neither D1 nor D5 disclosed a process carried out on stearin having the IV required by claim 1. The claimed process was thus novel.

D1 was the closest prior art and the process it disclosed differed from that of claim 1 by the required IV. The problem underlying the claimed invention was that of providing an improved process and was credibly solved in view of the data in the patent. Even if the problem were to be reformulated, the less ambitious problem would be to provide a process leading to results comparable to those of the prior art. This problem was solved in view of the available evidence, and the claimed solution, which was characterised by using a starting material that was arguably less suitable than those used in the prior art, would not have been obvious to a skilled person. The claimed process was thus inventive.

IX. The board informed the parties in a communication that its preliminary opinion was that D21, D22 and D25 appeared admissible, that the claimed process appeared to have a basis in the application as originally filed, and that it was sufficiently disclosed and novel over D1 and D5. D1 appeared to come closest to the claimed invention and the issue of inventive step appeared to hinge on the question of which problem could be considered credibly solved in view of the available experimental evidence.

X. Oral proceedings before the board of appeal took place on 17 October 2023.

XI. The parties' final requests were as follows:

The appellant requested that the decision under appeal be set aside and that European patent No. 1 928 990 be revoked.

The respondent requested that the appeal be dismissed (main request) or that the patent be maintained with the claims of any one of auxiliary requests 1 to 7, auxiliary requests 1 to 3 as filed with the reply to the grounds of appeal, auxiliary requests 4 to 7 as filed with letter dated 12 January 2023.

XII. At the end of the oral proceedings, the decision was announced.

Reasons for the Decision

1. The appeal is admissible.

2. Amendments

2.1 In its communication in preparation for the oral proceedings, the board informed the parties of its preliminary view that the features of claim 1 had a basis in the combination of claim 1 with page 5, line 13, as originally filed, which corresponds to the opposition division's conclusion.

2.2 No further arguments in this respect were submitted in writing and the parties relied on their written submissions at the oral proceedings. Under these circumstances, the board sees no reason to depart from

its preliminary view.

2.3 The ground for opposition under Article 100(c) EPC does not preclude the maintenance of the patent as granted.

3. Admissibility of D21, D22, D24, D25 and D26

3.1 D21

Experimental evidence D21 was filed with the statement of grounds of appeal. The respondent argued that D21 was late filed and not prima facie relevant, that the appellant had not explained why this evidence had not been produced earlier and that it was not a direct response to an unexpected argument during the oral proceedings. In its communication, the board had informed the parties that it was of the preliminary view that D21 was admissible. The parties did not want to argue on this issue at the oral proceedings before the board.

According to Article 12(1)(a) RPBA 2007, the statement of grounds of appeal forms the basis of the appeal proceedings. Article 12(4) RPBA 2007 stipulates that the board has the power to hold inadmissible evidence which should (not merely could) have been presented earlier. It does not refer to the prima facie relevance of the evidence or require any unexpected development of the case underlying the appeal.

The board thus sees no reason to use its discretion not to admit D21 into the proceedings.

3.2 D22

D22 is a textbook which reflects the common general

knowledge in the field of edible oils. The board sees no reason to exclude a piece of evidence of this kind from the proceedings.

3.3 D24 and D25

D24 was filed by the respondent with its reply to the grounds of appeal and is not prior art for the claimed invention. D25, which was filed by the appellant, provides a list of publications of a technical expert.

Neither D24 nor D25 is relevant to the present decision. Thus, the admissibility thereof does not have to be addressed.

3.4 D26

The piece of evidence D26 provides calculations for the transesterification of different mixtures of PPP and POP with oleic acid. It was filed in the appeal proceedings after the summons to oral proceedings, and its admissibility is therefore governed by Article 13(2) RPBA 2020, which requires exceptional circumstances.

The appellant argued that D26 was filed in direct response to the incorrect statement of the respondent that C52 in a reaction mixture equated to its OPO proportion.

The respondent has relied on C52 in combination with the SN-2 value as reflecting the proportion of OPO in a mixture from the outset of the opposition proceedings, and it is used in this manner in the patent. The use of the parametric definitions set out in the patent to measure what the patent says is anything but

unexpected.

The appellant also argued that D26 was a natural development of an argument already on file and was easy to grasp. However, none of these arguments proves the existence of the required exceptional circumstances.

Thus, in the absence of exceptional circumstances, D26 cannot be admitted into the proceedings pursuant to Article 13(2) RPBA 2020.

4. Sufficiency of disclosure

4.1 Claim 1 relates to a process for producing OPO from palm oil stearin having a defined IV by enzymic transesterification with oleic acid or an ester of oleic acid.

4.2 It was undisputed that the enzymic transesterification of compositions comprising tripalmitoyl triglyceride (PPP) with oleic acid was known from the prior art (D1). It was undisputed that palm oil stearin having the IV required by claim 1 was also known from the prior art (D8, D22). In view of this, the board fails to see why a skilled person could not carry out the claimed invention.

4.3 In addition, the appellant filed experimental evidence (D9) by reacting stearin having the required IV with olive oil over an enzymatic catalyst. The claimed invention is sufficiently disclosed for this reason too.

4.4 The appellant argued that the examples of the patent could not be accurately reproduced. Even if that was the case, the question to be answered under sufficiency

of disclosure is whether a skilled person can reliably find embodiments of the claimed process. In view of the evidence presented by the appellant itself, this is the case even if accurately reproducible examples were to be lacking.

4.5 The appellant further argued that the patent did not show that the alleged effect of enhanced efficiency could be obtained. However, claim 1 does not require a specific efficiency level. It merely requires that OPO be obtained, which has not been contested in the proceedings.

4.6 At the oral proceedings before the board, the appellant argued that the parameters on which the claimed invention relies for measuring the proportion of OPO in the product, namely the C52 and SN-2 of the palmitoyl residues, did not accurately represent that proportion. Thus, the patent did not disclose how the effect of the claimed invention could be determined, which was not sufficiently disclosed for this reason too.

As explained above, the claimed invention merely requires that OPO be obtained, which has not been contested. The accuracy of OPO determination is not an issue in the context of the sufficiency of the patent's disclosure.

4.7 The ground for opposition under Article 100(b) does not preclude the maintenance of the patent as granted.

5. Novelty

5.1 Neither D1 nor D5 discloses a process carried out with a feed having the required IV and thus the claimed process is novel (Article 54 EPC). The appellant did

not dispute that the claimed process was novel at the oral proceedings and therefore the board sees no reason to depart from its preliminary view in this respect.

5.2 Document D1 discloses a process for the preparation of 2-palmitic acid glycerides by selective transesterification with lipase enzymes of glycerides (see the abstract). Page 5, lines 19 and 20, discloses a top fraction of palm oil as a suitable starting material, but not its IV. Example 1 uses a fraction containing 80% PPP and 20% POP (IV=6) and Example 2 a mixture of 20% PPP and 20% POP (IV=23); in both cases the IV is outside the range stipulated in claim 1.

5.3 Document D5 discloses the reaction of palm stearin with oleic sunflower acids over an immobilised enzyme (see column 3, lines 60 and 61). The starting material is further characterised in column 2, lines 50 to 54: it arises from palm oil, contains more than 60% of trisaturated triglycerides and more than 20% of monounsaturated triglycerides. This passage does not disclose a specific IV value.

The appellant argued that a skilled reader would have envisaged a mixture containing 60% SSS and up to 40% SSU. This embodiment was in fact acknowledged as explicitly disclosed by the respondent during the opposition proceedings and has the IV required by claim 1.

In the appeal proceedings, the respondent has refuted the argument that D5 discloses such a mixture and the board cannot see a mixture of 60% SSS and 40% SSU disclosed in D5 either. D5 simply leaves 20% of the mixture components undefined. The appellant's argument

is therefore not convincing.

6. Inventive step

Claim 1 relates to a process for producing OPO from palm oil stearin having a defined IV by enzymic transesterification with oleic acid or an ester of oleic acid.

OPO is the major glyceride in human milk fat (see D1, page 2, lines 32 and 33).

6.1 Closest prior art

The opposition division considered D1 to be the closest prior art. The parties agreed with this conclusion at the oral proceedings before the board, and the board sees no reason to differ.

It was undisputed that the process of claim 1 and that of D1 differ on account of the IV of the starting material.

The iodine value is an indication of the unsaturation of the starting material and is expressed in terms of the number of centigrams of iodine absorbed per gram of sample. This was not disputed.

6.2 Technical problem underlying the invention

6.2.1 The parties had different views on the formulation of the technical problem effectively solved by the claimed invention.

6.2.2 The respondent defined the technical problem as being to provide a more efficient process for producing OPO

from stearin, leading to a higher quality product.

6.3 Solution

The solution to this technical problem is the claimed process, characterised by a stearin having an IV of between 8 and 12.

6.4 Success

6.4.1 The respondent argued that the problem formulated above had been credibly solved by the claimed method in view of the data in the patent.

According to the appellant, the patent lacked a method for reliably determining the absolute proportion of OPO and there was no evidence on file in the form of a book or standard which could show that the proportion of OPO could be reliably measured. C52 (the proportion of triglyceride having 52 carbon atoms), SN-2 (the proportion of palmitoyl residues in the 2-position of the triglyceride) or C48 (PPP) could not show the proportion of OPO in the final product. C52 included both OPO and OOP. SN-2 reflected the relative amount of palmitoyl residues in the 2-position of the triglyceride but was dependent on the proportion of other components such as PPP. The appellant argued that for these reasons it was not possible to arrive at any conclusion from the available data.

However, the appellant relies on the same parametric definitions as the patent in its own experimental evidence (D9, D21). In view of the available evidence, the board can only conclude that C52 and SN-2 suitably reflect the proportion of OPO.

6.4.2 The data filed by the appellant as D9 shows that there is no increase of OPO production linked to the IV of the feed. The problem formulated by the respondent has thus not been credibly solved.

6.4.3 The respondent argued that, by running the experiments in D9 to more than 90%, the results obtained could not be considered representative of the claimed invention.

However, claim 1 does not limit the extent of reaction. The third to fifth runs in D9 are thus embodiments of the process of claim 1.

6.5 Reformulation of the technical problem

6.5.1 In accordance with the case law (Case Law of the Boards of Appeal, 10th ed. 2022, I.D.4.3.1), alleged but unsupported advantages cannot be taken into consideration in determining the problem underlying the invention.

As the alleged improvement in terms of increased efficiency is not achieved by every embodiment of the claimed process, the technical problem as defined above needs to be reformulated.

6.5.2 D9 shows that the results obtained by a method starting from a stearin having the IV required by claim 1 are comparable and not worse than those obtained with a stearin having an IV close to that of the method of the closest prior art D1.

In view of these results, the problem should be reformulated as being to provide a process for OPO production with results comparable to those of the

prior art.

6.5.3 As the available evidence, including that filed by the opponent, shows no deterioration of the results between starting materials having an IV as in the closest prior art and feeds having the IV required by claim 1, the problem as reformulated in the previous point is considered to be credibly solved by the claimed process.

6.6 It thus remains to be decided whether the proposed solution to the objective problem as defined above would have been obvious to a skilled person in view of the prior art.

6.6.1 D1 discloses that palm oil stearin is a suitable starting material for the production of OPO.

It was undisputed that it was known from the prior art that the enzymatic process of claim 1 selectively occurs at the 1- and 3- glycerin substituents.

It was also undisputed that the IV reflects the unsaturation degree of the starting material, which is mainly due to the proportion of oleic acid residues.

Lastly, it was undisputed that stearin having the IV required by claim 1 was known from the prior art (D8, D22).

6.6.2 The appellant argued that a stearin having a higher IV would have been an obvious starting material for a skilled person seeking an alternative.

6.6.3 However, in view of the higher proportion of oleic acid in the starting triglyceride, a skilled person would

have expected worse results: a larger proportion of oleic acid residues implies a higher proportion of oleic acid in the 2-position of glycerin, which does not transesterify under enzymatic conditions and thus does not lead to obtaining OPO.

In contrast, the data provided by the appellant itself shows no significant difference in the reaction product arising from the IV of the starting material. The foreseeable disadvantage linked to a less suitable starting material (it contains less PPP) is thus not reflected in the final product.

6.6.4 The skilled person seeking a non-disadvantageous alternative to the process of D1 would not have had any motivation to replace the starting material with another one having a higher IV. The claimed solution is thus inventive.

6.6.5 The appellant argued that it was obvious to use a starting material as required by claim 1 when seeking a cheaper option.

However, the problem underlying the claimed invention is not merely to find a cheaper option, but to find an option which does not worsen the process. This argument is thus not convincing.

6.6.6 The appellant argued that it could not be expected to repeat the experimental evidence in the patent in order to prove that no advantage had been obtained in view of the lack of accurate experimental details and reliable measurement methods.

This may well be the case. However, the appellant nevertheless provided its own experiments (D9, D21)

according to claim 1 and measured the results in the same manner as the patent. If the appellant was of the opinion that the examples of the patent could not show the amount of OPO produced, it should have measured the OPO content differently, if technically possible. It is for the parties to decide whether to file experimental evidence and how to design the experiments for proving their point. This argument is thus not convincing.

6.7 Thus, the claimed process is inventive within the meaning of Article 56 EPC.

7. The ground of opposition laid down in Article 100(a) EPC does not preclude the maintenance of the patent as granted.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

C. Rodríguez Rodríguez A. Zellner

Decision electronically authenticated