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Datasheet for the decision of 13 September 2022

Case Number: T 1349/19 - 3.3.09

Application Number: 13713532.3

Publication Number: 2956010

IPC: A23L33/00, A23D9/00, C11C3/08, A23D9/02, A23L33/115, A23L33/12

Language of the proceedings: EN

Title of invention:
FAT COMPOSITION

Patent Proprietor:
Bunge Loders Croklaan B.V.

Opponents:
Cargill, Incorporated
Enzymotec Ltd.
Société des Produits Nestlé S.A.

Headword:
Fat composition/BUNGE LODERS

Relevant legal provisions:
EPC Art. 56

Keyword:
Main request: inventive step - (Yes)

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It can be changed at any time and without notice

Decisions cited:

Catchword:
Inventive step objection based on hindsight: arguments involving a convoluted set of sequential steps conceived starting from the claimed subject-matter and working backwards in attempt to bridge the gap with the prior art (Reasons 1.27)

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Case Number: T 1349/19 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 13 September 2022

Appellant: (Opponent 3)	Société des Produits Nestlé S.A. Entre-deux-Villes 1800 Vevey (CH)
Representative:	Elkington and Fife LLP Prospect House 8 Pembroke Road Sevenoaks, Kent TN13 1XR (GB)
Respondent: (Patent Proprietor)	Bunge Loders Croklaan B.V. Hogeweg 1 1521 AZ Wormerveer (NL)
Representative:	Potter Clarkson The Belgrave Centre Talbot Street Nottingham NG1 5GG (GB)
Party as of right: (Opponent 1)	Cargill, Incorporated 15407 McGinty Road West Wayzata, MN 55391 (US)
Representative:	Elseviers, Myriam Cargill R&D Centre Europe BVBA Bedrijvenlaan 9 2800 Mechelen (BE)
Party as of right: (Opponent 2)	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: **Interlocutory decision of the Opposition Division of the European Patent Office posted on 4 March 2019 concerning maintenance of the European Patent No. 2956010 in amended form.**

Composition of the Board:

Chairman M. Ansorge
Members: A. Veronese
D. Rogers

Summary of Facts and Submissions

I. The appeal was filed by opponent 3 (appellant) against the decision of the opposition division which held that the European patent as amended according to auxiliary request 2, filed during the oral proceedings before the opposition division, met the requirements of the EPC.

II. Claim 1 of auxiliary request 2 reads as follows:

"*A fat composition which is a blend of fats of vegetable origin, having the following fatty acid content:*

- *from 3 to 5% C8:0*
- *from 1 to 5% C10:0*
- *from 2 to 10% C12:0*
- *from 1 to 5% C14:0*
- *from 15 to 30% C16:0*
- *from 1 to 7% C18:0*
- *from 25 to 45% C18:1*
- *from 15 to 30% C18:2, and*
- *from 0.5 to 5% C18:3,*

said percentages being by weight based on total C8 to C24 fatty acids present in the fat composition,

wherein at least 33% of total C16:0 is bound to the sn-2 position in a glyceride,

and wherein the composition comprises:

- *from 20 to 40% by weight of an OPO-rich fat*
- *from 20 to 40% by weight soybean oil*
- *from 10 to 20% by weight palm kernel oil*

- *from 5 to 15% by weight sunflower oil*
- *from 5 to 10% by weight of a medium chain triglyceride oil comprising at least 90% by weight C8:0 and C10:0 based on total C8 to C24 fatty acids present in the medium chain triglyceride oil,*
- *from 1 to 10% by weight high oleic sunflower oil, and from 0.1 to 2% by weight flaxseed oil."*

III. With their notices of opposition, the three opponents had requested the revocation of the patent in its entirety on the grounds of, *inter alia,* Article 100(a) EPC (lack of inventive step).

IV. The documents submitted during the opposition proceedings included:

D3: WO 2011/135564 A1

D5: R.G. Jensen et al., Journal of Dairy Science, vol. 73, 1990, pp. 223-240

D9: EP 0 758 846 B1

D11: W.W. Christie et al., Journal of the Society of Dairy Technology, vol.35(1), 1982, pp. 22-23

D14: R. Lubetzky et. al., IMAJ, vol. 14, 2012, pp. 7-10

D19: WO 2006/114791

D20: Food Fats and Oils, Prepared by the Institute of Shortening and Edible Oils, Washington, USA, 9th edn., 2006,

D22: A. López-López et al., European Journal of Clinical Nutrition, vol.56, 2002, pp. 1242-1254

D23: E.N. Smit et al., Acta Paediatrica, vol.92, 2003, pp. 790-796

V. In its decision, the opposition division found, *inter alia*, that the subject-matter of auxiliary request 2 was novel over D3 and involved an inventive step over the teaching of this document, which was considered to be the closest prior art, whether considered alone or in combination with the teaching of the other prior art documents cited.

VI. With its statement setting out the grounds of appeal, the appellant filed the following documents:

D24: Linseed oil, extract from Wikipedia

D24a: alpha-Linolenic acid, extract from Wikipedia

D24b: alpha-Linolenic acid (ALA), extract from the Medmelon Encyclopedia

VII. The arguments presented by the appellant that are relevant to the decision can be summarised as follows:

- the claimed subject-matter did not involve an inventive step over D19, the closest prior art; the claimed composition differed from that disclosed in Table 15 of D19 in six technical features; these features were not associated with any particular effect; the composition was not cheaper to produce either;

- the problem to be solved was "the provision of an alternative vegetable-derived fat composition having a fatty acid content closer to that of human milk fat";

- D14 provided an incentive to increase the amounts of C8:0 and C10:0 fatty acids in the composition of D19; it would have been obvious to replace some of the palm olein with MCT oil, which contained these fatty acids, and to replace some of the OPO-rich fat with the claimed vegetable oils, which were disclosed e.g. in D24, D24a and D24b; these steps would have afforded the claimed composition; the combined teaching of D5, D9, D11, D14, D22 and D23 provided a further incentive to perform these steps; the claimed subject-matter was a mere juxtaposition of features disclosed in the prior art.

VIII. The arguments presented by the patent proprietor (respondent) that are relevant to the decision can be summarised as follows:

- the claimed invention involved an inventive step starting from D19 as the closest prior art; the six distinguishing features were those identified by the appellant; increasing the amounts of C8:0 and C10:0 fatty acids and decreasing that of the OPO-rich fat base afforded a cheaper composition suitable for infant nutrition;

- the problem to be solved was "the simple and cost-effective provision of a vegetable-derived fat composition that can mimic the composition of human milk";

- the claimed invention involved an inventive step, whether or not the composition was considered to be an improvement over D19 or simply an alternative thereto;

- D14 did not provide a pointer to the claimed compositions because it described milks comprising different amounts of C18:0, C18:1 and C18:3 fatty acids;

- D19 taught against reducing the amount of refined palm olein in the blend of Table 15 and/or reducing the OPO fraction by 4%, and replacing this amount with flaxseed and high oleic sunflower oil;

- D5, D9, D11, D22 and D23 taught reducing rather than increasing C8:0 and C10:0 fatty acids; their combined teaching did not provide any pointer to the claimed invention either;

- the appellant's reasoning was based on hindsight, because it involved cherry-picking information from different prior art documents and a convoluted series of steps not suggested by the prior art.

The requests

IX. The appellant requested that the decision under appeal be set aside and that the patent be revoked.

X. The respondent requested, as a main request, that the appeal be dismissed, or, alternatively, that the decision under appeal be set aside and that the patent be maintained on the basis of one of auxiliary requests 1 to 5, all of which were filed with its letter dated 24 October 2019.

Reasons for the Decision

Main request

1. *Inventive step*

1.1 The opposed patent relates to a fat composition comprising 1,3-dioleoyl-2-palmitoylglyceride (OPO), to its production and to its use in an infant formula. The idea underlying the invention is to provide a composition suited to replace human milk, which can be produced cheaply from vegetable sources; see paragraph [0008] of the opposed patent.

The closest prior art

1.2 The opposition division considered D3 to be the closest prior art and held that the claimed subject-matter involved an inventive step over the teaching of this document, whether considered alone or in combination with the teaching of the other documents cited. The appellant did not contest this finding. However, it argued that D19, rather than D3, represented the closest prior art. In its opinion, the "final blend" shown in Table 15 of D19 was to be considered the starting point for the assessment of inventive step, because it had more features in common with the claimed subject-matter than the fat blend disclosed in D3.

1.3 Like the opposed patent, D19 relates to fat blends comprising OPO and vegetable-derived triglycerides and to infant formulae comprising these blends; see page 1, first paragraph. These fat blends are intended to mimic the properties of human milk fat and to be cost-effective to produce; see page 7, paragraph 5, and

page 8, paragraph 2. The "final blend" composition in Table 15 is closest to the composition of claim 1.

1.4 The respondent did not contest the appellant's choice of D19 as the closest prior art. Since no argument for diverging from this choice was presented by the respondent, and neither is one *prima facie* apparent, the board agrees to consider the "final blend" in Table 15 of D19 to be the closest prior art for the assessment of inventive step.

Distinguishing features and technical effects

1.5 It was not disputed that the composition of claim 1 differs from the fat blend in Table 15 of D19 in the six following features:

(i) a higher concentration of C8:0 fatty acid (3 to 5 wt% *vs* 0.3 wt% in D19)
(ii) a higher concentration of C10:0 fatty acid (1 to 5 wt% *vs* 0.3 wt% in D19)
(iii) a lower concentration of OPO-rich fat (20 to 40 wt% *vs* 43 wt% in D19)
(iv) the presence of 5 to 10% medium chain triglyceride (MCT) comprising at least 90% of C8:0 and C10:0 based on the total C8 to C24 fatty acids (there is none in D19)
(v) the presence of 1 to 10% high oleic sunflower oil (there is none in D19)
(vi) the presence of 0.1 to 2% flaxseed oil (there is none in D19).

1.6 The respondent submitted that the claimed composition is cheaper to produce than that of D19 because it comprises a lower amount of the OPO-rich fat fraction, which is the most costly component of human milk fat

replacements. It also argued that its production does not require the use of randomised oils.

1.7 These arguments are not convincing. As noted by the appellant, the amount of OPO, the most expensive ingredient of the OPO-rich fraction, can be higher in the composition according to the invention than in that of D19; e.g. when the claimed composition contains 40% of the OPO-rich fraction. Furthermore, like that of D19, the claimed composition can contain randomised oils; see paragraph [0051].

1.8 There is no evidence that any of the six aforementioned distinguishing technical features is associated with a particular technical effect. Furthermore, there is no reason to consider the claimed fat composition to be closer to that of human milk fat than that disclosed in D19.

Underlying technical problem

1.9 For these reasons, starting from D19 as the closest prior art, the objective technical problem is the provision of an alternative vegetable-derived fat composition which can mimic the fat composition of human milk and which can be produced in a simple and cost-effective manner. It was not contested that this problem has been solved by the provision of the claimed composition.

Non-obviousness of the claimed solution

1.10 In order to show that the claimed solution to the underlying problem does not involve an inventive step, the appellant relied primarily on D14. This document describes a study investigating the changes in the

fatty-acid profile of human milk during prolonged lactation. Table 2 shows the fatty-acid composition of milk produced by two groups of mothers, most of whom were on a Mediterranean-type diet, after a short period of lactation and prolonged lactation, respectively. The appellant considered D14 to be a reliable reference showing the fat composition of typical human milk.

1.11 The appellant focused first of all on the aforementioned distinguishing features (i) and (ii), namely the higher concentration of C8:0 and C10:0 fatty acids. The appellant noted that, as shown in D14, the amount of these fatty acids in human milk was 3.84 to 3.94% and 2.88 to 5.14%, respectively. These amounts were higher than those in the composition of D19 (i.e. 0.3%; see Table 15).

1.12 Therefore, in the appellant's opinion, in order to provide a composition better suited to replace human milk, the skilled person would have increased the amount of C8:0 and C10:0 fatty acids in the fat blend of D19. They would have considered medium chain triglyceride oil (MCT oil) as the best source of C8:0 and C10:0 fatty acids. Consequently, they would have included 7% of the MCT oil mentioned in paragraph [0078] of the patent to achieve a content of C8:0 and C10:0 fatty acids within the claimed ranges. Paragraph [0078] taught that this specific oil, comprising 53.8% of caprylic acid (C8:0) and 46.1% of capric acid (C10:0), was commercially available. Moreover, D20 showed that MCTs were part of common general knowledge.

1.13 Furthermore, the appellant contended that the skilled person would also have been inclined to:

(a) reduce the randomised palm olein content to allow for the added 7% MCT oil; they would have also reduced the amount of palm olein, rather than that of soybean, sunflower and palm kernel oil, because:

- palm olein contained significant amounts of C16:0 and C18:1 fatty acids, which were "present in significantly higher amounts in the Final Blend [*of D19*] than in human milk fat" (presumably according to D14)
- the amount of C18:2 fatty acid provided by the sunflower and soybean oil in the composition of D19 could not be decreased because C18:2 fatty acid was "present in the Final Blend in an amount close to the lower limit of 21.2% found in human milk" (presumably according to D14)
- the amount of C12:0 fatty acid provided by the palm kernel oil in the composition of D19 could not be reduced because it was not present in the composition of D19 in significant excess compared to human milk fat (presumably according to D14)

(b) replace 4% of the OPO-rich fat with 3% high oleic sunflower and 1% flaxseed oil because:

- the skilled person had "plenty of C16:0 and C18:1 to play with" (presumably according to D14)
- "the skilled person could readily remove small amounts of OPO-rich fat, e.g. 4%, and replace it with any other commonly used vegetable oils"
- claim 11 and page 34, paragraph 1, of D19 provided an incentive to reduce the amount of OPO-rich fat
- high oleic sunflower oil was high in C18:1 fatty acid, as shown in D20

- flaxseed oil was high in C18:3 fatty acid, as shown in D24, D24a and D24b.

1.14 The appellant acknowledged that, starting from D19, several steps had to be taken to arrive at the claimed composition. However, in its opinion, these steps were "interconnected such that a change in one will have an influence on one or more of the other steps". This meant that only two obvious modifications were required: the replacement of some of the palm olein with MCT oil and the replacement of some of the OPO-rich fat with high oleic sunflower oil and flaxseed oil.

1.15 These arguments are not convincing.

1.16 The appellant selected D14 to describe the fatty acid profile of a typical human milk. It then drew attention to the differences in the amounts of the C8:0 and C10:0 fatty acids shown in D14 and in D19. However, it disregarded the information disclosed in D14 relating to the other relevant fatty acids. In particular, it did not take into account the fact that:

- the amount of C18:0 fatty acid present in human milk according to D14 (14.9 to 15.9%) is considerably higher than that of the fat blend in D19 (5.0%),

- the amounts of C18:1 and C18:3 fatty acids in human milk (21.5 to 24.2% and around 0.89 to 1.54%, respectively) are considerably lower than those of the fat blend in D19 (33.5 and 2.3%, respectively).

1.17 This means that, had the appellant relied on the complete teaching of D14 when searching for an

alternative composition, the skilled person would not only have modified the amounts of C8:0 and C10:0 fatty acids in the composition of D19, but also those of C18:0, C18:1 and C18:3 fatty acids. This would have afforded a composition falling outside the scope of claim 1. The amounts of C18:0 and C18:1 fatty acids in claim 1 (1 to 7% and 25 to 45%, respectively) differ, in fact, from those shown in D14 (14.9 to 15.9% and 21.5 to 24.2%, respectively).

1.18 Furthermore, as submitted by the respondent, the skilled person would have been reluctant to reduce the amount of refined palm olein from the fat blend in Table 15 of D19. This oil, as well as the other randomised oils, is in fact considered crucial for stabilising the OPO-rich fat base in the compositions of D19; see page 34 and Tables 14 and 15.

1.19 No incentive to perform the other steps suggested by the appellant can be found in the prior art either. In particular, no incentive can be found to use the claimed amounts of flaxseed oil and high oleic sunflower oil to replace 4% of the OPO-rich fraction in the fat blend of D19 or to use 7% MCT oil having the specific composition stipulated in claim 1 to replace the palm olein.

1.20 According to the appellant, claim 11 and page 34 of D19 would have prompted the skilled person to reduce the OPO fraction by 4%. However, had the skilled person followed the teaching of these sections of D19, they would have replaced a larger amount of the OPO fraction, reducing its amount from 43% down to 25 to 30%, the amount mentioned in claim 11 of D19; this would have resulted in an amount of flaxseed oil and high oleic sunflower oil outside the claimed range.

1.21 To show that the skilled person would have used the MCT oil specified in claim 1 to replace palm olein, the appellant relied on the patent, which states that this oil was commercially available, and on D20. However, D20, which provides general information on fats and oils, teaches that medium chain triglycerides comprise fatty acids with 6 to 10 carbon atoms; it does not disclose the specifically claimed MCT oil, i.e. an MCT oil comprising at least 90% by weight of C8:0 and C10:0 based on the total C8 to C24 fatty acids. Paragraph [0078] of the patent states that an MCT oil falling within the definition was commercially available on the relevant date. However, neither the patent nor D20 provides evidence that the use of this oil in infant nutrition was part of common general knowledge. Thus, the argument that including this oil in the composition would have been obvious is not convincing.

1.22 Finally, the appellant argued that, starting from D19, the skilled person was "likely to combine the teaching of D5, D9, D11, D14, D22 and D23 (to account for the known variation in human milk fat content) and thus arrive at a range for the amount of each fatty acid in human milk". In its opinion, a broad range defining possible amounts of each fatty acid could be created, combining the lowest and highest amounts of the fatty acids observed in the various milks disclosed in these documents. It then contended that, since the ranges in claim 1 were encompassed in, or at least overlapped with, these broadly defined ranges, the claimed composition was the result of a mere juxtaposition of obvious features selected by "cherry-picking" from the prior art.

1.23 This argument is not persuasive either.

1.24 The claimed invention relates to a fat composition comprising OPO, which is suited to replace the human milk fat in an infant formula.

1.25 It was not disputed that the fatty acid profile of human milk may be subjected to variations, depending on the diet, geographic location and age of the mothers. However, this does not mean that the amount of each individual fatty acid can be freely varied within the entire breadth of ranges created by piecing together the teaching of different prior art documents, as suggested by the appellant. Each of the milks shown in D5, D9, D11, D14, D22 and D23 is obtained in specific circumstances and contains a balanced mixture of fatty acids suitable for providing nutrition to an infant.

1.26 The cautious and conservative skilled person would not have considered the aforementioned broad, artificially created ranges to be guidelines for preparing fat blends for replacing human milk fat. Therefore, they would not have been motivated to prepare the claimed fat composition in the manner suggested by the appellant.

1.27 As noted by the respondent, the appellant's arguments involve a convoluted set of sequential steps conceived starting from the compositions defined in claim 1 and working backwards, in an attempt to bridge the considerable gap with the composition described in D19. Since these steps are not suggested by the prior art, they can only be taken by exercising hindsight.

1.28 For these reasons, the subject-matter of claim 1, as well as that of the following claims, involves an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Schalow M. Ansorge

Decision electronically authenticated