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# Datasheet for the decision of 9 July 2019

**Case Number:** T 1395/15 - 3.3.09

**Application Number:** 05795459.6

**Publication Number:** 1799052

**IPC:** A23L1/29, A23L1/305

**Language of the proceedings:** EN

**Title of invention:**
METHODS FOR THE MANUFACTURE OF NUTRITIONAL PRODUCTS HAVING IMPROVED QUALITY

**Patent Proprietor:**
Société des Produits Nestlé S.A.

**Opponents:**
ABBOTT LABORATORIES
Friesland Brands B.V.
N.V. Nutricia

**Headword:**

**Relevant legal provisions:**
EPC Art. 100(c), 56

**Keyword:**
Amendments - added subject-matter (no)
Inventive step - (yes)

**Decisions cited:**

**Catchword:**

Europäisches Patentamt
European Patent Office
Office européen des brevets

**Beschwerdekammern**

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**Case Number: T 1395/15 - 3.3.09**

# D E C I S I O N
# of Technical Board of Appeal 3.3.09
# of 9 July 2019

| | |
|---|---|
| **Appellant:** (Opponent 3) | N.V. Nutricia<br>Eerste Stationsstraat 186<br>2712 HM Zoetermeer (NL) |
| **Representative:** | Nederlandsch Octrooibureau<br>P.O. Box 29720<br>2502 LS The Hague (NL) |
| **Respondent:** (Patent Proprietor) | Société des Produits Nestlé S.A.<br>Entre-deux-Villes<br>1800 Vevey (CH) |
| **Representative:** | Plougmann Vingtoft a/s<br>Strandvejen 70<br>2900 Hellerup (DK) |
| **Party as of right:** (Opponent 1) | ABBOTT LABORATORIES<br>100 Abbott Park Road<br>Abbott Park IL 60064 (US) |
| **Representative:** | Boult Wade Tennant LLP<br>5th Floor, Salisbury Square House<br>8, Salisbury Square<br>London EC4Y 8AP (GB) |
| **Party as of right:** (Opponent 2) | Friesland Brands B.V.<br>Stationsplein 4<br>3818 LE Amersfoort (NL) |
| **Representative:** | FrieslandCampina Nederland B.V.<br>IP Department<br>P.O. Box 238<br>Bronland 20<br>6700 AE Wageningen (NL) |

**Decision under appeal:** **Interlocutory decision of the Opposition Division of the European Patent Office posted on 23 April 2015 concerning maintenance of the European Patent No. 1799052 in amended form.**

**Composition of the Board:**

**Chairman** W. Sieber
**Members:** F. Rinaldi
F. Blumer

## Summary of Facts and Submissions

I. This decision concerns the appeal filed by opponent 3 against the interlocutory decision of the opposition division that European patent No. EP 1 799 052 as amended met the requirements of the EPC.

II. With their respective notice of opposition, the three opponents had requested revocation of the patent on the basis of Article 100(a) (lack of novelty and lack of inventive step), Article 100(b) (only opponent 1 and 3) and Article 100(c) EPC (only opponent 3).

The documents submitted during the opposition proceedings included:

D3: US 4,544,559
D4: WO 2004/054371 A2
D5: US 6,099,871
D7: US 4,144,357.

III. In the decision under appeal, the opposition division decided that the subject-matter of claims 1 and 2 as granted (main request in opposition proceedings) lacked novelty. However, the first auxiliary request complied with the requirements of the EPC. In particular, the subject-matter of claims 1 and 2 involved an inventive step in view of D7 as the closest prior art. The opposition division also decided that D3, D4 and D5 did not constitute the closest prior art.

Claims 1 and 2 of the first auxiliary request read as follows (amendments over claims as granted in bold):

"1. A method of producing a commercially sterile powdered nutritional composition including a source of proteins, a source of lipids and a source of carbohydrates, the method comprising **in sequential order**: dissolving the source of proteins in water, adding the lipid source, homogenizing the protein/lipid mixture, heat treating the mixture to reduce bacterial loads, concentrating the heat treated mixture, adding part of the carbohydrate source and spray-drying the mixture, wherein at least part of the remainder of the carbohydrate source is added to the spray dried powder in an additional dry-mixing step."

"2. A method of producing a commercially sterile powdered nutritional composition including a source of proteins, a source of lipids and a source of carbohydrates by spray drying, the method comprising **in sequential order**: dissolving the source of proteins in water together with the minimum amount of carbohydrate necessary to facilitate the spray drying, adding the lipid source, homogenizing the protein/lipid mixture, heat treating the mixture to reduce bacterial loads, concentrating the heat treated mixture, spray-drying the mixture and adding the remainder of the carbohydrate source, wherein at least part of the remainder of the carbohydrate source is added during the spray drying step by blowing into the spray dryer."

The patent as granted contained only two claims.

IV. In its statement setting out the grounds of appeal, opponent 3 (appellant) requested that the decision of the opposition division be set aside and that the patent be revoked in its entirety.

V. In its reply, dated 3 November 2015, the patent proprietor (respondent) requested that the appeal be held inadmissible. If the board considered the appeal admissible, the respondent requested that the appeal be dismissed (main request) or, alternatively, that the patent be maintained on the basis of the first to fourth auxiliary requests filed with the reply. Furthermore, it filed the following document:

D23: R. K. Owusu-Apenten, "Introduction to food chemistry", Boca Raton: CRC Press, 2005, 159.

VI. The parties were summoned to attend oral proceedings. The board set out its preliminary opinion in a communication.

VII. In a further written submission, the appellant elaborated on its arguments.

VIII. On appeal, opponents 1 and 2 (parties as of right) did not file any requests or substantive submissions. However, they informed the board that they would not attend the oral proceedings.

IX. On 9 July 2019, oral proceedings were held before the board. At the oral proceedings, the respondent withdrew the request that the appeal be held inadmissible.

X. The appellant's arguments relevant to the present decision may be summarised as follows:

Added subject-matter:
The subject-matter of claim 1 of the main request was not directly and unambiguously derivable from claims 32 and 33 as originally filed. The amendment in claim 1 ("adding part of the carbohydrate source and spray-

drying the mixture") allowed for carbohydrates to be added at any step of the method.

Inventive step:
The opposition division erred in selecting D7 as the closest prior art. Instead, D3 had to be regarded as the closest prior art. It described a process for producing infant milk powder, and in view of the results of example 2 of the opposed patent the process of D3 implicitly resulted in reduced AGEs formation. Starting from D3, the subject-matter of claims 1 and 2 was obvious. The same reasoning applied to D4 and D5 as closest prior art.

XI. The respondent's arguments relevant to the present decision may be summarised as follows:

Added subject-matter:
The subject-matter of claim 1 of the main request was based on claims 32 and 33 as originally filed. Claim 1 defined a sequence of steps which excluded the addition of a part of the carbohydrate source before the step of concentrating the heat treated mixture.

Inventive step:
D7 was the only document concerned with reducing the formation of AGEs formed by the Maillard reaction. None of D3 to D5 dealt with this issue, and it was only with hindsight that these documents might be taken into consideration as the closest prior art.

## Reasons for the Decision

1. *Article 100(c) EPC*

1.1 The appellant disagreed with the opposition division's decision that the pre-grant amendment in claim 1 of the main request, namely "adding part of the carbohydrate source and spray-drying the mixture, wherein at least part of the remainder of the carbohydrate source is added to the spray dried powder in an additional dry-mixing step", was directly and unambiguously derivable from claims 32 and 33 as originally filed.

1.2 Claims 32 and 33 read as follows (emphasis added by the board):

"32. A method of producing a commercially sterile powdered nutritional composition including a source of proteins, a source of lipids and a source of carbohydrates, the method comprising dissolving the source of proteins in water, adding the lipid source, homogenizing the protein/lipid mixture, heat treating the mixture to reduce bacterial loads, concentrating the heat treated mixture, adding **the carbohydrate source** and spray-drying the mixture."

"33. The method of Claim 32, wherein **at least part of the remainder of the carbohydrate source** is added to the spray dried powder in an additional dry-mixing step."

1.3 The appellant argued that claim 32 related to a method in which the (entire) carbohydrate source was added after the step of concentrating the heat treated

mixture. Claim 33 offered the possibility of a further addition of carbohydrates but exclusively at a later stage, given the claim language "wherein at least part of the remainder of the carbohydrate source is added to the spray dried powder ...". On account of the use of the word "remainder", claim 33 therefore implied that there was an addition of carbohydrates after concentration but before spray drying, and a further addition of carbohydrates at a later stage, where at least part of that second batch was added in a dry mixing step. Due to the introduction of the terminology "part of" during examination (... adding **part of** the carbohydrate source and spray-drying ...), claim 1 of the main request also allowed for further carbohydrate additions, e.g. before heat treating. Thus, the subject-matter of claim 1 encompassed added matter.

1.4 However, the appellant's reasoning is not convincing.

1.4.1 It is undisputed that claim 32 implicitly defines a specific order, i.e. a specific sequence in which the steps described in the claim are carried out. This was explained in detail in the decision under appeal (point 4.2) and the appellant does not contest this part of the decision.

1.4.2 When incorporating the subject-matter of claim 33 into claim 32 as filed, it becomes immediately evident that a literal combination leads to an inconsistency. While claim 32 requires that **the** (i.e. the entire) carbohydrate source is added after the step of concentrating the heat treated mixture but before spray drying, dependent claim 33 allows for at least part of the remainder of the carbohydrate source to be added after spray drying.

1.4.3 Thus, the redrafting of claims 32 and 33 into a single claim (amended claim 1) calls for an adaptation of the term "the carbohydrate source" because the definite article is no longer correct. For the skilled reader, the amendment to "part of the carbohydrate source" - as introduced in the pre-grant phase - is the logical replacement term which is required by the adaptation.

1.4.4 The board agrees with the appellant's interpretation of the methods disclosed in claims 32 and 33 as filed, in particular as regards the technical implication of the term "remainder". However, the term "remainder" in claim 1 is still linked to the term "part of the carbohydrate source" and in the board's view it still has the same technical implications as in claim 33 as filed. If "part of the remainder of the carbohydrate source" is added at a later stage of the process (as is the case both in present claim 1 and in original claim 33), this implies that this remainder was created at a previous stage, namely after concentrating the heat treated mixture. At that stage, part of the (entire) carbohydrate source is added and the rest of the (entire) carbohydrate source (i.e. the part which is not added), becomes the remainder. Contrary to the appellant's allegation, there is no room for further carbohydrate additions before heat treating.

Thus, claim 1 of the main request still implies the specific sequential order of the steps that were possible according to claim 33 as filed:

- there is a first step of adding part of the (entire) carbohydrate source, thereby creating the remainder - this is after the step of concentrating the heat treated mixture;

- there is a second step of adding *all* or *only a part of the remainder* of the carbohydrate source after spray drying; and
- in cases where o*nly a part of the remainder* of the carbohydrate source was added after spray drying, there will be a third step to introduce the part of the remainder not yet added, but only at a later stage of the process.

1.4.5 Thus, amended claim 1, which has to be construed as explained, does not describe a method in which a carbohydrate source is added to the mixture prior to the step of concentrating the heat treated mixture. Consequently, the amendment in claim 1 does not introduce added subject-matter either.

1.5 It follows that the ground for opposition under Article 100(c) EPC does not prejudice the maintenance of the patent.

2. *Field of the invention*

The opposed patent relates to nutritional products, in particular infant formulas (paragraph [0001]). These formulas have to be microbiologically safe and the products are typically heat treated before spray drying to produce the final product in the form of a powder (paragraph [0006]). However, heat treating can adversely affect the molecular structure of the ingredients of these formulas. The amino acid lysine may react with aldehyde groups of carbohydrates in a Maillard reaction and ultimately generate advanced glycation end-products (AGEs) (paragraphs [0007] and [0008]). AGEs may be associated with chronic low level inflammation (paragraph [0010]). The opposed

patent aims at providing nutritional products having reduced levels of AGEs (paragraph [0011]).

3. *Inventive step*

3.1 In the decision under appeal, the opposition division disagreed with the view of opponent 3 (now appellant) that D3, D4 or D5 constituted the closest prior art. Instead, D7 was used as the closest prior art because it was the only cited prior-art document which referred to the same problem as the opposed patent, i.e. the reduction of Maillard reaction end-products or AGEs. The opposition division arrived at the conclusion that the subject-matter of claims 1 and 2 of the first auxiliary request (which are identical to the claims of the main request on appeal) involved an inventive step.

3.2 The appellant did not contest the finding of the opposition division starting from D7 as the closest prior art. However, the appellant argued that the opposition division erred in disregarding documents D3, D4 and D5 as closest prior art. Starting from this set of documents, the subject-matter of claims 1 or 2 would have been obvious for the person skilled in the art. At the oral proceedings, the appellant indicated that the discussion could be limited to D3, which also represented the teaching of D4 and D5.

3.3 Thus, the issue to be decided is whether D3 can be considered the prior art closest to the subject-matter of claims 1 and 2.

3.4 *D3 as the prior art closest to claim 2*

3.4.1 The appellant argued that D3 related to a process for producing an infant milk powder (figure 3; column 11,

line 54 to column 12, line 38). The process involved, *inter alia*, mixing a solution of lactose with cow's milk, demineralised whey and vegetable oils, followed by homogenisation, pasteurisation (i.e. heat treating), evaporation (i.e. concentration), spray drying and mixing lactose and vitamin powder into the spray dried powder. It could be derived from the amounts described in D3 that 50% by weight of the carbohydrate source was added at the beginning of the process, before heat treating, and the remaining 50% by weight after spray drying. According to the appellant, the effect of adding a part of the carbohydrates before heat treating and the remainder after heat treating was derivable from example 2 of the opposed patent. In this example, 51% by weight of the carbohydrate source was added prior to heat treating. This amount of carbohydrate corresponded to the one disclosed in D3. In view of all this, example 2 of the opposed patent demonstrated that the process of D3 inevitably or implicitly resulted in reduced AGEs formation.

3.4.2 The appellant's use of D3 as the closest prior art relies on the results of example 2 of the opposed patent to demonstrate the implicit effect of the process of D3. However, the respondent stated at the oral proceedings that none of the examples in the opposed patent fell under the scope of claim 1 and 2. In particular, the respondent declared that example 2 was "completely meaningless" and no information could be taken from it.

3.4.3 The board agrees with the respondent's assessment of example 2, which reads as follows:

"58 kg of whey protein isolate is dry mixed with 100 kg of non-fat dry milk solids ... To this mixture, 550 kg

of spray-dried fat composition containing 270 kg of fat (...) and 280 kg of maltodextrin carrier is added. This mixture is homogenized and heat treated ... and then spray dried. 160 kg of edible lactose[,] is blown into the spray dryer and a further 100 kg is dry mixed with the mixtures of mineral and micronutrients in powder form ..."

The example does not describe any addition of water. Nevertheless, the ingredients of the mixture are dry mixed and subsequently homogenized and spray dried. In view of this, it is immediately evident that this example makes no technical sense. It is also manifest that such a method does not correspond to what is described in claim 2 (where the step of dissolving the source of proteins in water is explicitly mentioned). In fact, the method as described does not make it possible to draw any conclusion as to whether or not the Maillard reaction is prevented. It is also not capable of providing any indication as to what may be the "minimum amount of carbohydrate necessary to facilitate the spray drying" mentioned in claim 2.

3.4.4 In view of these considerations, the board agrees with the respondent that it is only with hindsight that the process of D3 might be taken into consideration. In this context, reference is also made to Case Law of the Boards of Appeal of the EPO, 8th edition, 2016, Chapter I.D.6: "When assessing inventive step, an interpretation of the prior art documents as influenced by the problem solved by the invention, where the problem was neither mentioned or even suggested in those documents, must be avoided, such an approach being merely the result of an a posteriori analysis".

3.4.5 Thus, D3 is not the prior art closest to the subject-matter of claim 2.

3.5 *D3 as the prior art closest to claim 1*

3.5.1 The appellant's argument that D3 is the closest prior art for assessing the inventive step of claim 1 is based on its reading the claim to mean that any amount of carbohydrate source may be added before heat treating.

3.5.2 However, as discussed above in the context of added subject-matter, the board does not agree with appellant's reading of claim 1. According to the method of claim 1, the carbohydrate source is introduced only after the step of concentrating the heat treated mixture. In view of this, the process of D3 (in which a substantial part of the carbohydrate source undergoes heat treatment) differs considerably from the subject-matter of claim 1.

3.5.3 Thus, D3 is also not the prior art closest to subject-matter of claim 1 either.

3.6 With respect to D4 and D5, the appellant has not provided any argument as to why they would be more suited than D3 as the closest prior art. Like D3, these two documents do not relate to the prevention of the Maillard reaction. Thus, D4 and D5 do not qualify as the prior art closest to the subject-matter of claims 1 and 2 either.

3.7 Instead, D7 is considered the prior art closest to the subject-matter of claims 1 and 2.

Since the appellant did not contest the opposition division's decision that the subject-matter of claims 1 and 2 involves an inventive step when starting from D7 as the closest prior art and since the board sees no reason to review the opposition division's decision based on D7, the appellant's inventive-step attack is unsuccessful.

3.8 Thus, the subject-matter of claims 1 and 2 involves an inventive step, Article 56 EPC.

4. No decision on the auxiliary requests is required because the main request is allowable.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar: The Chairman:

L. Malécot-Grob W. Sieber

Decision electronically authenticated