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**Datasheet for the decision  
of 26 September 2017**

**Case Number:** T 0098/15 - 3.3.09

**Application Number:** 05106834.4

**Publication Number:** 1618790

**IPC:** A23C1/16, A23C9/142, A23C3/02

**Language of the proceedings:** EN

**Title of invention:**  
Heat-stable concentrated milk product and process for its  
preparation

**Patent Proprietor:**  
Intercontinental Great Brands LLC

**Opponent:**  
Friesland Brands B.V.

**Headword:**

**Relevant legal provisions:**  
EPC Art. 54, 56, 83, 123(2), 123(3)

**Keyword:**  
Auxiliary request 4 - satisfies the requirements of the EPC

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

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Case Number: T 0098/15 - 3.3.09

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.09**  
**of 26 September 2017**

**Appellant:** Intercontinental Great Brands LLC  
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**Representative:** Boulton Wade Tennant  
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**Respondent:** Friesland Brands B.V.  
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**Representative:** V.O.  
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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
30 October 2014 concerning maintenance of the  
European Patent No. 1618790 in amended form.

**Composition of the Board:**

**Chairman** W. Sieber  
**Members:** N. Perakis  
D. Prietzel-Funk

## Summary of Facts and Submissions

- I. This decision concerns the appeal filed by the patent proprietor against the interlocutory decision of the opposition division maintaining European patent No. 1 618 790 in amended form.
- II. With the notice of opposition the opponent requested that the patent be revoked in its entirety on the grounds of Article 100(a) (lack of novelty and lack of inventive step), (b) and (c) EPC. The relevant documents cited in the notice of opposition were:
- D1: EP 0 316 938 A2;  
D4: WO 92/21245 A1;  
D5: WO 2006/012506 A1; and  
D7: US 5 356 640 A.
- III. The opposition division decided to maintain the European patent on the basis of the claims of auxiliary request 3 submitted during the oral proceedings of 28 August 2014.

Independent method claim 1 and independent product claim 6 of this request read as follows:

"1. A method of making a stable concentrated dairy liquid, said method comprising:

- (1) providing a dairy liquid containing serum proteins and casein proteins;
- (2) forewarming the dairy liquid at a temperature of at least 60°C for a time sufficient to form a forewarmed dairy liquid having a level of pH 4.6 soluble protein reduced by at least 25 weight percent;

(3) concentrating the forewarmed dairy liquid to form a first intermediate dairy liquid having at least 8.5 weight percent total protein, wherein the concentration is carried out using ultrafiltration with or without diafiltration;

(4) adding 0.1 to 1 weight percent of a stabilizer which is trisodium citrate, and 0.1 to 1 weight percent of a mouthfeel enhancer which is sodium chloride, to the first intermediate dairy liquid to form a second intermediate dairy liquid; and

(5) sterilizing the second intermediate dairy liquid at a temperature and for a time sufficient to obtain the stable concentrated dairy liquid, wherein the stable concentrated dairy liquid has a  $F_0$  of at least 5,

wherein the second intermediate dairy liquid is resistant to gelation during sterilization, and wherein the stable concentrated dairy liquid is resistant to gelation for at least six months of storage under ambient conditions,

wherein the stable concentrated dairy liquid contains 0.1 to 1 weight percent of trisodium citrate, 0.1 to 1 weight percent sodium chloride, 1 to 10 weight percent sugar, and 0.01 to 0.3 weight percent flavors."

"6. A stable concentrated dairy liquid comprising 9 to 15 weight percent total protein, 0.3 to 17 weight percent fat, 0.5 to 5 weight percent lactose, 0.1 to 1 weight percent stabilizer which is trisodium citrate, and 0.1 to 1 weight percent mouthfeel enhancer which is sodium chloride;

wherein the stable concentrated dairy liquid has a  $F_0$  of 5 to 12 and wherein the stable concentrated dairy liquid is resistant to gelation for at least six months of storage under ambient conditions,

and wherein the stable concentrated dairy liquid contains 1 to 10 weight percent sugar, and 0.01 to 0.3 weight percent flavors."

The opposition division held in its interlocutory decision that:

- the invention as claimed in auxiliary request 3 complied with the requirements of Articles 83 and 84 EPC;
- the subject-matter of the claims of auxiliary request 3 complied with the requirements of Article 54 EPC since D5 could not be validly cited against the claims; and
- the subject-matter of the claims of auxiliary request 3 involved an inventive step. D1, which was considered the closest prior art, did not disclose the presence of the stabiliser citrate (difference of claims 1 and 6 over D1) or the forewarming of the dairy liquid (difference of claim 1 over D1). The skilled person seeking to improve stability and sterility of the concentrated dairy liquid of D1 (technical problem underlying the claimed invention in view of D1) would not have found in D7 or in any other cited document the motivation to use citrate as stabiliser and to forewarm the dairy liquid.

IV. The patent proprietor (in the following: the appellant) appealed this decision and requested that it be set aside and that the patent be maintained as granted. With the statement setting out the grounds of appeal dated 5 March 2015 it submitted six auxiliary requests of which only auxiliary request 4 is relevant for this decision.

The process claims 1 to 5 of auxiliary request 4 correspond to the process claims 1 to 5 of auxiliary request 3 held allowable by the opposition division.

The independent product claim 6 of auxiliary request 4 is broader in scope than the product claim allowed by the opposition division. Apart from the deletion of two compounds from the list of stabilisers it corresponds to independent product claim 8 as granted and reads as follows:

"6. A stable concentrated dairy liquid comprising 9 to 15 weight percent total protein, 0.3 to 17 weight percent fat, 0.5 to 5 weight percent lactose, 0.05 to 1 weight percent stabilizer selected from the group consisting of disodium phosphate, dipotassium phosphate, disodium citrate, trisodium citrate and mixtures thereof, and 0.05 to 1 weight percent mouthfeel enhancer selected from the group consisting of sodium chloride, potassium chloride, sodium sulfate and mixtures thereof;  
wherein the stable concentrated dairy liquid has a  $F_0$  of 5 to 12 and wherein the stable concentrated dairy liquid is resistant to gelation for at least six months of storage under ambient conditions."

- V. With a letter dated 2 July 2015, the opponent withdrew its opposition and is therefore no longer a party to these proceedings.
  
- VI. On 30 June 2017, the board issued a communication in preparation for the oral proceedings. Regarding auxiliary request 4, the board's preliminary opinion was that the main issue to be discussed at the oral

proceedings was inventive step of the product claims in view of D1 in combination with D4.

VII. On 26 September 2017 oral proceedings took place before the board. During the oral proceedings the appellant withdrew all requests except auxiliary request 4.

The appellant argued that the subject-matter of claim 6 of auxiliary request 4 involved an inventive step. D1 was the closest prior art. It related to a milk concentrate which did not comprise any stabiliser. A skilled person starting from D1 and seeking to provide a shelf-stable (resistant to gelation over a prolonged period of storage) and organoleptically pleasing concentrated dairy liquid would not have found any motivation in the state of the art to add any stabiliser to the concentrated dairy liquid of D1. Regarding D4, this document actually taught away from using stabilisers in concentrated milk products. Furthermore, on the basis of the information provided in the patent and in the absence of any counter-evidence submitted by the opponent it was plausible that the technical problem was solved over the entire scope of the claim.

VIII. The appellant requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of claims 1 to 10 of the auxiliary request 4 submitted on 5 March 2015, description pages 2 to 14 filed during the oral proceedings before the board and figures 1 to 3 (3 pages) of the patent specification as published.



## Reasons for the Decision

1. This decision concerns auxiliary request 4 which is the only request maintained by the appellant.

Process claims 1 to 5 of this request are identical with the process claims 1 to 5 of auxiliary request 3 maintained by the opposition division. The opponent did not contest the decision of the opposition division and the board saw no reason to challenge this finding. Nor did the former opponent.

Thus, this decision deals only with claims 6 to 10 of the auxiliary request 4 in more detail.

2. Article 123(2) EPC

- 2.1 Apart from the deletion of the two compounds - tripotassium citrate and sodium hexametaphosphate - from the list of stabilisers, independent product claim 6 corresponds to claim 8 as granted. Both the opposition division and the board in its communication had pointed out that these two compounds were not originally disclosed in combination with the claimed weight percentages. This objection has been overcome by deleting the two compounds.

- 2.2 The subject-matter of independent product claim 6 derives from the subject-matter of independent product claim 10 as filed. It refers, however, only to stabiliser and mouthfeel enhancer and does not list the specific compounds. These compounds are disclosed in the description as filed on page 17, lines 8-10 (for the list of stabilisers) and on page 17, lines 13-15 (for the list of mouthful enhancers). They are disclosed in rather general terms, and it is evident to

the skilled person that these are the stabilisers and mouthfeel enhancers to be used in the embodiments of the invention, i.e. also in the concentrated dairy liquid described in claim 10 as filed.

2.3 The additional features of dependent claims 7 to 10 of auxiliary request 4 are disclosed in the respective dependent claims 11 to 14 of the application as filed.

2.4 The board is therefore satisfied that the claimed subject-matter complies with the requirements of Article 123(2) EPC.

3. Article 123(3) EPC

As already mentioned, independent claim 6 of the auxiliary request 4 corresponds to independent claim 8 as granted apart from the deletion of tripotassium citrate and sodium hexametaphosphate from the list of stabilisers. This amendment was contested by the opponent during the opposition proceedings on the basis of Article 123(3) EPC. However, this amendment corresponds to a limitation of the scope of claim 8 as granted. Therefore, the subject-matter of claim 6 complies with the requirements of Article 123(3) EPC.

4. Sufficiency

The board agrees with the opposition division's conclusion that the invention as claimed in the (then) auxiliary request 3 is disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

This conclusion applies equally to the invention as claimed in the present auxiliary request 4, because the only points of contention, the  $F_0$  value and the measurement of gelation, are recited in both claim sets.

5. Novelty

No documents were validly cited against the novelty of the subject-matter of the granted claims. The claims of auxiliary request 4 are even further distinguished from the prior art, and by consequence, are also considered to be novel over the cited prior art.

6. Inventive step

6.1 The board agrees with the appellant that D1 should be considered the closest prior-art document for the concentrated dairy liquid of claim 6. D1 discloses a milk concentrate which consists of 8-12% fats, 9-11% milk protein, 1.5-1.7% lactose, 2.8-3.2% saccharose, about 2% minerals, about 0.5% salt (e.g. NaCl) and the balance water (claim 1; page 3, line 10). This concentrate is long-term stable and does not have the drawbacks of a normal lactose content but is nevertheless of a high organoleptic quality (page 2, lines 10-11).

The concentrate of claim 6 of auxiliary request 4 differs from the concentrate of D1 in that:

- it further contains 0.05 to 1 weight percent of a stabiliser selected from the group consisting of disodium phosphate, dipotassium phosphate, disodium citrate, trisodium citrate and mixtures thereof,

- it has a  $F_0$  of 5 to 12 (the appellant submitted in its letter of 3 October 2011, point 6.5, without having been contradicted by the then opponent that the concentrate milk of D1 has an  $F_0$  of 3.3), and
- it is resistant to gelation for at least six months when stored under ambient conditions (absence of an indication of resistance to gelation in D1).

6.2 During the oral proceedings the appellant defined the technical problem in view of D1 as the provision of a shelf-stable (resistant to gelation over a prolonged period of storage) and organoleptically pleasing concentrated dairy liquid. This is also the technical problem cited in the patent in suit (paragraphs [0001] and [0013]).

This technical problem is indeed solved over the entire scope of the claim. In this context, the appellant referred to example 6 and table 6 in the patent, which show the advantageous contribution of mouthfeel enhancers having monovalent cations (as required by the claim) to milk stability when compared with mouthfeel enhancers containing divalent cations. The experiments of example 3 (table 3, inventive samples 2, 3 and 7) and example 5 (table 5, inventive sample) further illustrate the advantageous technical effects of all claimed mouthfeel enhancers. As regards the stabilisers, paragraph [0036] discloses that it is believed that calcium-binding stabilisers prevent gelation, and that calcium-binding buffers or stabilisers include citrate and phosphate buffers. The stabilisers listed in the claim belong to these classes of compounds. Furthermore, the experiments of example 3 (table 3: inventive samples 4, 5 and 6) illustrate the advantageous effect of such citrate and phosphate

stabilisers, and paragraph [0069] summarises the results. On this basis and in the absence of any counter-evidence, there can be no doubt that the above-defined technical problem is solved over the entire scope of the claim.

6.3 A skilled person starting from D1 and seeking to provide a shelf-stable and organoleptically pleasing concentrated dairy liquid would not find any motivation in D1 itself or the other cited prior art to add the claimed stabilisers in the claimed amounts to the milk concentrate of D1.

During the proceedings before the opposition division the opponent combined D1 with D7. This document discloses the addition of buffered phosphate and citrates in a cheesemaking process in order to avoid formation of an acid coagulum during fermentation (column 7, lines 1-12). However, as the opposition division correctly noted, the skilled person would not be motivated to combine elements of a cheesemaking process with D1 in order to obtain improved shelf-life and organoleptic properties of the dairy liquid.

As regards D4, it discloses that the concentrated milk products should be free of stabilisers or other additives to prevent gelation during long-term storage (page 1, lines 3-4 of the first paragraph; page 2, last two paragraphs). It also discloses that when a stabiliser, such as sodium citrate or disodium phosphate, is used, it does not prevent age gelation but on the contrary it appears to cause age gelation (page 13, first two paragraphs). Thus the thrust of D4 teaches away from the use of stabilisers in concentrated dairy milk products and it is unlikely that the skilled person would modify the concentrated

dairy liquid of D1 to include stabilisers in view of the teaching of D4.

- 6.4 Hence, the subject-matter of claim 6 involves an inventive step.
- 6.5 Dependent claims 7 to 10 concern specific embodiments of the subject-matter of claim 6 and are therefore inventive *mutatis mutandis*.
7. During the oral proceeding before the board, the appellant filed an amended description which was found to be in line with the amended claims.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is remitted to the opposition division with the order to maintain the patent in amended form on the basis of:
  - claims 1 to 10 of auxiliary request 4 submitted on 5 March 2015,
  - description pages 2 to 14 filed during the oral proceedings before the board, and
  - figures 1 to 3 (3 pages) of the patent specification as published.

The Registrar:

The Chairman:



M. Cañueto Carbajo

W. Sieber

Decision electronically authenticated