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Datasheet for the decision of 31 January 2012

Case Number: T 1628/09 - 3.3.09

Application Number: 00943985.2

Publication Number: 1202638

IPC: A23G 9/32

Language of the proceedings: EN

Title of invention:
Process for preparing aerated frozen products

Applicant:
SOCIETE DES PRODUITS NESTLE S.A.

Opponent:
UNILEVER PLC / UNILEVER NV

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 83, 84, 123(2)

Keyword:
"Added subject-matter - no"
"Suficiency - yes"
"Clarity - yes"
"Novelty - yes"
"Inventive step - yes"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1628/09 **-** 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 31 January 2012

Appellants: (Opponents 2)
UNILEVER PLC
Unilever House
Blackfriars
London
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and

UNILEVER N.V.
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Respondent: (Patent Proprietor)
SOCIETE DES PRODUITS NESTLE S.A.
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Decision under appeal:
Interlocutory decision of the Opposition Division of the European Patent Office posted 4 June 2009 concerning maintenance of European patent No. 1202638 in amended form.

Composition of the Board:

Chairman: W. Sieber
Members: J. Jardón Álvarez
R. Menapace

Summary of Facts and Submissions

I. The grant of European patent No. 1 202 638 in respect of European patent application No. 00943985.2, in the name of SOCIETE DES PRODUITS NESTLE S.A., which had been filed on 3 July 2000 as international application PCT/EP2000/006250, was announced on 11 April 2007 (Bulletin 2007/15). The granted patent contained 15 claims, claim 1 reading as follows:

"1. A process for improving the heat shock resistance of aerated frozen products comprising the steps of

- preparing a mixture of ingredients suitable for preparing a frozen aerated product,
- adding an emulsifier mixture in a suitable amount to produce a mix, wherein the emulsifier mixture comprises at least propylene glycol monostearate,
- aerating the mix to obtain an aerated mix having an overrun of 5% to 250% and
- freezing the aerated mix to form an aerated frozen product having ice crystals,

wherein the ice crystal size is less than 30 microns."

Claims 2 to 15 were dependent claims.

II. A notice of opposition was filed against the patent by Unilever PLC and Unilever NV (joint opponents) on 11 January 2008. The opponents requested revocation of the patent in its entirety, reference being made to Article 100(a), (lack of novelty and lack of inventive step), (b) and (c) EPC.

A further notice of opposition was filed by Danisco A/S on the same day. This opposition was withdrawn by letter dated 8 April 2009.

The documents cited during the opposition proceedings included the following:

D1: US 2 604 406;

D2: US 3 355 300;

D10: Letter dated 20 August 2004 filed by the applicant during prosecution of the application;

D15: Extracts from W.S. Arbuckle "Ice Cream", 4th edition, pages 232-236, 316-323 and 364-365;

D24: Reproduction of Example 3B of D1, 6 pages, filed by the opponents with letter dated 20 February 2009; and

A4: Technical report filed by the applicant with letter dated 20 August 2004 during prosecution of the application.

III. By its interlocutory decision announced orally on 22 April 2009 and issued in writing on 4 June 2009, the opposition division decided that the claims of the proprietor's auxiliary request I met the requirements of the EPC. Claim 1 read as follows:

"1. A process for improving the heat shock resistance of aerated frozen products comprising the steps of

- preparing a mixture of ingredients suitable for preparing a frozen aerated product,
- adding an emulsifier mixture in a suitable amount to produce a mix, wherein the emulsifier mixture comprises at least propylene glycol monostearate,
- aerating the mix to obtain an aerated mix having an overrun of 5% to 250% and
- freezing the aerated mix to form an aerated frozen product having ice crystals and air cells,

wherein the ice crystal size is less than 30 microns and said air cells have an average size of less than 50 microns."

The opposition division came to the conclusion that claim 1 satisfied the requirements of Article 123(2) EPC. It also concluded that the requirements of Article 84 EPC were met because there was a convention in the art as to how the skilled person would establish the average air cell size.

Concerning Article 83 EPC, the opposition division did not regard any statement in D10 as an admission that part of the invention as claimed in the disputed patent was not sufficiently disclosed.

The opposition division acknowledged novelty because none of the cited documents disclosed explicitly or implicitly the combination of the features of claim 1. In particular the disclosure of D1 did not even implicitly render available a process for improving heat shock resistance wherein the ice crystals were

below 30 microns and the average air cell size was below 50 microns. The opposition division did not accept that D24 was a correct reproduction of D1 because the disclosure of D1 was too vague as regards the exact process steps used.

Finally, the opposition division, starting from D1 as the closest prior art, saw the problem underlying the patent in suit to be the provision of a process for improving heat shock resistance. The solution according to claim 1 of the patent, based on the correlation that ice crystal size and air bubble size were found to have with heat shock resistance, involved an inventive step as it was not suggested in the cited prior art.

IV. On 30 July 2009 the joint opponents (appellants) lodged an appeal against the decision of the opposition division and paid the appeal fee on the same day.

In the statement of grounds of appeal filed on 14 October 2009, the appellants requested revocation of the patent in its entirety. The appellants also filed the following further documents:

D15: page 202 (in addition to those pages already cited);

D24a: Measurement of the air cell size from the reproduction of example 3B of D1 (D24 in the opposition proceedings);

D29: Production and analysis of ice cream produced from the formulation of example 5 of D2, but frozen using a standard process;

D30: S. Turan *et al.*, "On the Stability of the Gas Phase in Ice-Cream" in "Food Emulsions and Foams: Interfaces, Interactions and Stability", ed. E. Dickinson and J.M. Rodriguez Patino, Royal Society of Chemistry 1999, Special Publication No. 227, pages 151-162;

D31: A. B. Russell *et al.*, "Influence of freezing conditions on ice crystallization in ice cream", Journal of Food Engineering, 39 (2), February 1999, pages 179-191;

D32: J.M. Aleong *et al.*, "Ice Recrystallization Inhibition in Ice Cream by Propylene Glycol Monostearate", Journal of Food Science E: Food Engineering and Physical Properties, 73(9), 2008, pages E463-E468;

D33: "Ice Cream", 6th Edition, R.T. Marshall *et al.*, Kluwer Academic/Plenum Publishers, New York 2003, pages 180-183; and

D34: K.B. Caldwell *et al.*, "A low-temperature scanning electron microscopy study of ice cream. I. Techniques and general microstructure", Food Structure, 11, 1992, pages 1-9.

V. With its reply dated 12 February 2010, the patent proprietor (respondent) disputed all the arguments submitted by the appellants and requested that the appeal be dismissed and that documents D15, D24a, and D29 to D34 not be admitted into the proceedings. It

also filed a set of claims for an auxiliary request and the following documents:

D35: M.E. Wijnen, "Instant Foam Physics. Formation and Stability of Aerosol Whipped Cream", Dissertation, pages 114-119, 1997; and

D36: W. Hanselmann, "Influences of Continuous Whipping Process Parameters on Foam Structure and Stability", Dissertation, pages 40-41, 1996.

VI. On 14 July 2011 the board dispatched a summons to attend oral proceedings. In the attached communication the board outlined the points to be discussed during the oral proceedings.

VII. On 23 November 2011 and 10 January 2012 the respondent filed further submissions. It also filed sets of claims for three auxiliary requests.

VIII. The appellants filed further arguments by letters dated 3 January and 25 January 2012. They also filed the following documents to provide evidence of the publication date and public availability of D30:

D30a: Front page of D30 and the bibliographic pages; and

D30b: Declaration of Dr. Susie Turan dated 24 January 2012.

IX. Oral proceedings were held on 31 January 2012. During the oral proceedings the respondent withdrew all its claim requests on file except the set of claims filed

as auxiliary request II with letter dated 23 November 2011.

The set of 13 claims of this sole request includes two independent claims, claim 1 reading as follows:

"1. A process for improving the heat shock resistance of aerated frozen ice cream comprising the steps of

- preparing a mixture of ingredients suitable for preparing a frozen aerated ice cream,
- adding an emulsifier mixture in a suitable amount to produce a mix, wherein the emulsifier mixture comprises at least propylene glycol monostearate,
- aerating the mix to obtain an aerated mix having an overrun of 20% to 250% and
- freezing the aerated mix to form an aerated frozen product having ice crystals and air cells,

wherein the ice crystal size is less than 30 microns and said air cells have an average size of less than 50 microns."

Claim 2 is directed to a process for improving the heat shock resistance of aerated frozen water ice comprising the same process features as claim 1 except that the aerated mix has an overrun of 5% to 100%.

Claims 3 to 13 are dependent claims.

During the oral proceedings the respondent filed amended pages 2 to 7 of the description.

X. The arguments presented by the appellants may be summarised as follows:

– The subject-matter of amended claims 1 and 2 extended beyond the content of the application as filed. Although the specific features now claimed were disclosed in the application as filed, they were always disclosed in combination with other features not incorporated in the present claims. The amendments made were thus an intermediate generalisation not supported by the disclosure of the application as filed.

– The amendment made during the opposition proceedings specifying the air cells size did not comply with the requirements of Article 84 EPC. The patent gave no details of the point at which the ice cream was sampled or of how the air cells had to be measured.

– The absence of information in the patent specification as to the methods for measuring the crystal size and the air cell size gave rise to an objection of sufficiency of disclosure. The absence of such information did not allow the skilled person to reproduce the invention. Additionally, the patent proprietor itself had admitted during the examination proceedings (D10) that part of the invention did not give appropriate results.

– The disclosure of document D1 was novelty-destroying for the subject-matter of claim 1. Although D1 did not explicitly disclose the

crystal size and the air cell size of the ice cream, the reworking of example 3B of D1 by the appellants (D24 and D24a) showed that these parameters were obtained when a conventional ice cream formulation containing propylene glycol monostearate was produced using a conventional process.

– Finally, even if it were considered that D1 did not disclose the ice crystal and air cell sizes, the claimed subject-matter lacked an inventive step. The appellants maintained that there was no evidence on file that the use of propylene glycol monostearate in combination with the ice crystal size and air cell size resulted in improved heat shock resistance. In the absence of a technical effect the problem underlying the patent in suit could only be seen as being the provision of an alternative method for producing heat shock resistant frozen aerated products. The claimed solution was part of the skilled person's common general knowledge and was therefore not inventive. Additionally, the subject-matter of claims 1 and 2 also lacked inventive step because the technical features specified in the claims did not solve the problem across the whole scope of the claim as shown in documents D10 and D29.

XI. The arguments of the respondent may be summarised as follows:

– The subject-matter of claims 1 and 2 was fully supported by the disclosure of the application as filed. The claimed features were independently

disclosed in particular on page 4, lines 3-7 in combination with page 7, lines 37-38 for the emulsifier and on page 4, lines 8-17 and lines 18-20 for the other features of the claim.

– The claimed subject-matter also fulfilled the requirements of Articles 83 and 84 EPC because it was well-established case law that standard methods which formed part of the skilled person's general knowledge did not need to be detailed in the specification. Moreover, example 3 of the patent disclosed a way of carrying out the invention.

– The disclosure of D1 was deficient as to the process steps that had been employed to produce the ice composition. The assertion of the appellants that any conventional process using propylene glycol monostearate would lead to aerated frozen products having the claimed features was not credible.

– Starting from the disclosure of D1 as the closest prior art, the respondent saw the problem underlying the patent in suit as being the provision of a process for improving heat shock resistance. This problem was solved by the process according to claim 1 or claim 2 using propylene glycol monostearate as emulsifier and carrying out the process under certain conditions to obtain a specific ice crystal and air cell size. This solution was not derivable from the cited prior art and therefore the claimed subject-matter was inventive.

– The respondent also objected to the admission of the documents cited by the appellants during the appeal proceedings as late-filed; these documents could have been filed already during the opposition proceedings. Concerning D30b the respondent maintained that it had had no opportunity to challenge the information in this document as it had been filed only a few days before the oral proceedings.

XII. The appellants requested that the decision under appeal be set aside and that European patent No. 1 202 638 be revoked.

The respondent requested that the decision under appeal be set aside and that the case be remitted to the opposition division with the order to maintain the patent in the following version:

– Description: pages 2-7 filed during the oral proceedings;

– Claims: claims 1-13 filed as auxiliary request II with letter dated 23 November 2011; and

– Drawings: sheets 1/4 to 4/4 of the patent specification.

Reasons for the Decision

1. The appeal is admissible.

2. *Late-filed evidence*

2.1 Documents D15 (new page 202), D24a and D29-D34, constitute new evidence, cited for the first time in the appellants' statement of grounds of appeal. Documents D30a and D30b were filed shortly before the oral proceedings to provide evidence of the publication date of D30 and of what had been made available to the public in Dr. Turan's presentation at the conference referred in D30. The respondent requested that these documents not be admitted into the proceedings because they were late-filed and not relevant.

2.2 *Documents D15 (new page 202), D24a, D29, and D31-D34*

2.2.1 Document D24a is concerned with the measurement of the air cell size of the reproduction of example 3B of D1 as obtained in D24. The filing of this document was prompted by the amendment made to claim 1 during the opposition proceedings and which now requires that the "air cells have an average size of less than 50 microns". Document D29 is a reproduction of example 5 of D2 to support the appellant's argument that the technical features of the claim do not solve the problem across the whole scope – an argument already developed during the oppositions proceedings. Documents D15 and D31-D34 were filed to show the common knowledge of the skilled person and/or to support arguments not followed by the opposition division.

Thus, the board sees no reason to hold these documents inadmissible under Article 12(4) RPBA. In fact, the filing of the documents appears to be the normal action of a losing party trying to contest the decision of the opposition division with its statement setting out the grounds of appeal.

Hence, documents D15 (new page 202), D24a, D29, and D31-D34 were admitted into the appeal proceedings.

2.3 *Documents D30, D30a and D30b*

2.3.1 D30 was filed by the appellants to support the argument already raised during the opposition proceedings that different results were obtained depending on the point at which the ice crystal size was measured. Since the copy of D30 filed by the appellants had no publication date, they filed D30a to provide evidence of this date. However, document D30a cannot provide the missing information as it merely indicates that the document was published in 1999, the priority date of the patent being 21 July 1999. Document D30b was filed because the respondent questioned that D30 was a valid disclosure of what had been made available in the conference reported in D30. D30b is a declaration by one of the authors of D30 stating that the paper reproduced in D30 was the lecture presented on the conference "Food Emulsions and Foams: Interfaces, Interactions and Stability" held at the University of Sevilla from 16 to 18 March 1998. The admissibility of this document was disputed by the respondent, who maintained that it could not challenge the accuracy of the document as it had been filed less than one week before the oral proceedings.

2.3.2 As the very late filing of D30b did not give the respondent the possibility to check its correctness, the board exercised its discretion under Article 114(2) EPC to disregard it. At the same time, the board notes that the information given in D30, namely that the air cell size changes during hardening, represents common general knowledge of the skilled person in the field, a fact which was not disputed by the respondent.

3. *Amendments*

3.1 In response to an objection under Article 100(c) EPC to claim 1 as maintained by the opposition division, the process claim has been divided into two independent process claims directed to the preparation of aerated frozen ice cream (claim 1) and of water ice (claim 2), respectively.

3.1.1 Claim 1 is based on claim 1 as filed, amended as follows:

- the emulsifier mixture comprises at least propylene glycol monostearate as disclosed on page 7, lines 37-38 of the application as filed;

- it specifies that the process is for improving heat shock resistance as disclosed several times in the description (cf. page 4, line 20; page 6, line 10, etc.); and

- it indicates the air cell size and the ice crystal size of the aerated frozen ice cream as disclosed in claims 16 and 18 of the application as filed.

3.1.2 The amendments made to claim 2 are analogous to those made to claim 1, incorporating into the claim the product features of the aerated frozen water ice disclosed in claims 20 and 22 of the application as filed.

3.2 The thrust of the appellants' objections under Articles 100(c) and 123(2) EPC was that the features incorporated into the claims were originally disclosed in combination with other features and that taking them in isolation out of the original context provides a new technical teaching.

3.3 However, this argument is devoid of merit for the following reasons. The appellants are right that, in some passages of the application as filed, some features are disclosed in combination with other features. However, there is support in the application as filed for their incorporation into claim 1.

3.3.1 Thus, the feature that the emulsifier mixture comprises at least propylene glycol is disclosed on page 3, lines 9-11 and in claim 4 in combination with the amount of emulsifier being in the range 0.01 to 3 wt%. However, it is also disclosed on page 7, first full paragraph, that "A typical aerated product mix **may** (emphasis by the board) contain ... an emulsifier blend in an amount of about 0.01% to about 3% by weight ..." This passage clearly supports the fact that the amount of emulsifier is not an essential feature of the process.

3.3.2 The improvement of heat shock resistance is disclosed independently of heat shrinkage on page 6, lines 9-10 and on page 16, lines 3-5. Moreover, the resistance to shrinkage is in fact the consequence of the improvement of heat shock, as explained on page 4, lines 16-20.

3.3.3 Finally, the air cell size and the ice crystal size are disclosed in isolation of other features on page 11, line 37-page 12, line 1 and on page 4, lines 14-16 as well as in claims 18 and 22.

3.4 The appellants did not raise any objection under Article 123(2) EPC against the remaining claims, i.e. dependent claims 3 to 13. The board too sees no reason to do so.

3.5 The amendments also clearly restrict the scope of the claims. Therefore the subject-matter of the claims fulfils the requirements of Articles 123(2) and (3) EPC.

4. *Clarity*

4.1 The appellants objected under Article 84 EPC to the amendment, during opposition proceedings, that the "air cells have an average size of less than 50 microns". In particular, they maintained that it was not clear how the air cell size had to be measured and at which point the ice cream had to be sampled, e.g. straight from the freezer or after hardening.

4.2 The board, however, agrees with the finding in the appealed decision that this amendment fulfils the requirement of clarity. Concerning the measurement of the air cell size, it is noted that this parameter is

well-known in the field and that methods for measuring it are known from standard ice cream text books such as D15. As pointed out by the respondent with reference to documents D35 and D36, microscopic techniques such as optical light microscopy, transmission electron microscopy and scanning electron microscopy are used for measuring the air cell size. These methods are well known to a skilled person in the art. The appellants have questioned the accuracy of the methods used but have not submitted any experimental evidence showing that other methods would give rise to significantly different results.

Concerning the point at which the ice cream is sampled, it is implicit in the wording of the claim that the sampling must occur at the end of the process, that is to say, after the hardening of the ice cream. This is also indicated in paragraph [0032] of the specification, where it is stated: "If the mix is allowed to aerate in a conventional freezer, the draw temperature of the frozen aerated product should be sufficient to generate a viscosity and shear in the freezer barrel to create fine air cells of average mean diameter of 50 microns or less after hardening of the aerated frozen product."

4.3 For these reasons, the amendments made to the claims fulfil the requirements of Article 84 EPC.

5. *Sufficiency of disclosure*

5.1 The patent relates to a process for improving the heat shock resistance of aerated frozen ice cream or water ice. The process includes the use a specific emulsifier and involves carrying out the standard process in such

a way that certain properties (overrun, crystal size and air cell size) are obtained. The specification includes a working example and the respondent filed further examples during examination proceedings (document A4) showing that the process can be carried out.

5.2 It is not disputed by the appellants that the skilled person knows how to carry out the process in order to obtain ice cream/water ice having the properties required by claims 1 and 2, but the appellants maintained that the absence of information in the patent specification as to the method of measuring the ice crystal/air cell size gave rise to an objection of sufficiency of disclosure.

5.3 This objection cannot be followed by the board. It is correct that sufficiency of disclosure might be questionable if specific values of an unusual parameter were indicated as essential to the invention and no method of measuring it were known in the art or disclosed in the patent. However, in the present case the parameters in question, ice crystal size and air cell size, are usual in the field of the patent in suit, as already indicated above for the air cell size (point 4.2), and the standard literature refers to several methods for their measurement.

5.4 Moreover, the appellants have not shown that they were unable to measure these parameters. On the contrary, they had no problems doing so when preparing aerated frozen products (cf. D24, D24a and D29).

5.5 The board is therefore satisfied that the requirement of sufficiency of disclosure is met.

6. *Novelty*

6.1 Novelty of the subject-matter of claim 1 has been contested by the appellants in view of the disclosure of document D1.

6.2 D1 relates to a stabilising agent for ice cream comprising the combination of an edible, non-toxic, water-soluble cellulose ether and the water-soluble gum of Irish moss (see claim 1). D1 further discloses that emulsifiers of the class of polyhydric alcohols, reacted with higher fatty acids such as propylene glycol monostearate, may be added to the ice cream (example 3, in particular, column 4, lines 48-55 and column 5, formula B).

However, there is no disclosure in D1 of the product features of the prepared ice cream. Neither the overrun nor the ice crystal or air cell sizes are disclosed in D1.

6.3 The appellants admitted that D1 does not explicitly state the ice crystal or air cell sizes of the ice cream of formula B of example 3, but argued that any conventional ice cream formulation containing propylene glycol monostearate prepared in a conventional manner would inevitably have ice crystals and air cells within the claimed sizes. This was confirmed by the appellants' own reproduction of example 3B of D1 yielding a product having ice crystal size and air cell size within the claimed values (cf. D24 and D24a).

However, the appellants' reasoning is not correct. The original disclosure of D1 is silent about the process steps used in the preparation of the ice cream. In column 4, lines 4-6 of D1 it is stated that "the ice cream was then treated in the usual manner to form a finished ice cream", and no further information about the process for production of the ice cream is given. When repeating the example of D1, the appellants made choices, e.g. the degree of aeration, which are not disclosed in D1. Thus, the appellants' repetition of D1 cannot show what was actually obtained in example 3B of D1. It is therefore irrelevant for the evaluation of the teaching of D1.

Further, the board does not accept the appellants' assertion that any conventional process using propylene glycol monostearate would lead to ice cream having the claimed ice crystal and air cell size. As indicated by the respondent, the ice crystal size depends on many factors including the materials used, the freezing rate, the hardening rate etc., which the skilled person has to control to enhance the production of the required small crystals. None of these parameters is disclosed in D1 and, consequently, a skilled person reworking the teaching of D1 would not inevitably end up with a product as claimed on claim 1. In the absence of precise process steps in the disclosure of D1, the board can only conclude that the process of claim 1 is not directly and unambiguously disclosed in D1.

6.4 For these reasons, the subject-matter of claim 1 is novel.

7. *Inventive step*

7.1 Claims 1 and 2 of the patent relate to a process for improving heat shock resistance of aerated frozen ice cream and water ice, comprising the step of freezing the aerated mix to form an aerated frozen product having an average air cell size of less than 50 microns and an ice crystal size of less than 30 microns. Heat shock occurs when ice cream is allowed to melt and refreeze. When this happens, water molecules in the ice cream can join together to form larger ice crystals, giving the ice cream an undesirable icy, grainy texture.

7.2 The opposition division in its decision considered that the closest prior art was represented by D1. Both parties to the proceedings also saw D1 as closest prior art. The board will proceed on the same basis.

7.3 As already discussed above in relation to novelty, D1 discloses the use of propylene glycol monostearate in the preparation of ice creams. D1 also teaches that propylene glycol monostearate slows the development of ice crystals (coarse texture) when the ice cream is stored at ordinary dispensing temperatures (column 4, lines 56-60).

7.4 Having regard to this prior art, the technical problem underlying the present invention is said to be the provision of a process for improving heat shock resistance of aerated frozen products.

7.5 As a solution to this problem, the patent in suit proposes the processes of claims 1 and 2 which are essentially characterised by the use of propylene

glycol monostearate as emulsifier in combination with the provision of small air cells and small ice crystals in the frozen product.

7.6 The experimental evidence in the patent in suit and the further examples filed by the respondent (technical report A4) show that this problem has been credibly solved. Thus, example 3 of the patent compares heat shock resistance of ice cream products made according to the invention and using other emulsifiers. The ice crystals and air bubble growth are restricted during heat shock compared with the conventionally made ice cream products.

The reduced ice crystal growth of the aerated frozen products of the invention when submitted to heat shock treatment is further confirmed by document A4. Ice crystal growth after heat shock treatment is reduced for frozen products with the small ice crystal size claimed (see in particular examples 3-6 and 7).

7.7 The appellants contested this finding, citing the disclosure of D10 and D29. In their opinion, the claims covered embodiments using propylene glycol monostearate and further emulsifiers which did not improve resistance to heat shock.

7.8 The board cannot follow this argument. In D10, a letter from the applicant (now respondent) filed during examination proceedings for the present patent, it was stated in relation to the disclosure of a prior-art document that "In our invention, the combination of PGMS and glycerol monostearate does not give appropriate results". However, this comment was made in

relation to a quite different claim relating to a different emulsifier mixture and not specifying the product features (ice crystal and air cell sizes) of present claims 1 and 2. Consequently, the sentence cited by the appellants gives no information about the process presently claimed.

In D29 the appellants prepared a dry ice cream mix according to the disclosure of example 5 of D2 which was then rehydrated in cold water and frozen and aerated to produce an ice cream. D29 thus combines the preparation of ice cream from a dry powder, described in D2, in a very specific way with two further steps – freezing and aerating – which are not part of the teaching of D2. Moreover, the mixture of emulsifiers is very unusual and would not be used in the preparation of standard ice cream. Finally, as pointed out by the respondent during the oral proceedings, D29 does not compare the results with and without propylene glycol monostearate and does not allow the conclusion to be drawn that no improved heat shock resistance has been obtained.

In fact, the process of D29 does not correspond to any standard process for the preparation of ice cream, and no fair comparison has been made. Therefore, this disclosure does not refute the experimental evidence submitted by the respondent.

Consequently, the board is satisfied that the technical problem as defined in point 7.4 is indeed the objective technical problem underlying the invention.

7.9 Obviousness

7.9.1 It remains to be decided whether, in view of the available prior-art documents, it would have been obvious for the skilled person to solve the above-defined technical problem by the claimed combination of propylene glycol monostearate with an ice crystal size of less than 30 microns and air cells size of less than 50 microns.

7.9.2 There is no hint to this solution in the prior art cited by the appellants.

The use of propylene glycol monostearate as an emulsifier in the preparation of ice creams is well known. However, there is no teaching in the prior art that improved heat shock resistance is obtainable by combining the use of this emulsifier with a specific ice crystal size and air bubble size. The argument of the appellants that D1 provided such a hint to the skilled person because it mentioned that propylene glycol monostearate slowed the development of ice crystals is unfounded. D1 does not relate to heat shock resistance and does not mention the claimed ice crystal size. Rather, it appears that the appellants' argument is based on hindsight.

7.10 In view of the above, the board concludes that the person skilled in the art would not have arrived in an obvious manner at the claimed invention in the form of claims 1 and 2. Consequently, the subject-matter of these claims and, by the same token, of dependent claims 3 to 13 involves an inventive step within the meaning of Article 56 EPC.

8. The respondent provided during the oral proceedings a description adapted to the claims of its only request. No objections were raised by the appellants against these amendments to the description, and the board does not have any of its own.

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 in the following version:

- description: pages 2-7 filed during the oral proceedings on 31 January 2012;
- claims: claims 1-13 filed as auxiliary request II with letter dated 23 November 2011; and
- drawings: sheets 1/4 to 4/4 of the patent specification.

The Registrar The Chairman

G. Röhn W. Sieber