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**Datasheet for the decision
of 10 May 2007**

Case Number: T 1341/04 - 3.3.09

Application Number: 95306832.7

Publication Number: 0765605

IPC: A23G 1/18

Language of the proceedings: EN

Title of invention:

Process for accelerating the polymorphic transformation of edible fats using ultrasonication

Patentee:

KRAFT JACOBS SUCHARD R & D, INC.

Opponents:

Unilever N.V.
NESTEC S.A.

Headword:

-

Relevant legal provisions:

EPC Art. 64, 68, 83, 100(b), 107, 117

Keyword:

"Reconsideration of the sufficiency of disclosure (yes - Respondents not adversely affected by the appealed decision)."

Decisions cited:

G 0002/92, G 0004/93, T 0327/92, T 0169/93, T 0190/99,
T 0250/04

Catchword:

-



Case Number: T 1341/04 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 10 May 2007

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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 23 April 2004
revoking European Patent No. 0765605 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Kitzmantel
Members: N. Perakis
W. Sekretaruk

Summary of Facts and Submissions

I. Mention of the grant of European patent No 0 765 605 in respect of European patent application No 95306832.7 in the name of Kraft Jacobs Suchard R & D, Inc, which had been filed on 27 September 1995, was announced on 24 April 2002 (Bulletin 2002/17). The patent, entitled "Process for accelerating the polymorphic transformation of edible fats using ultrasonication", was granted with twenty-seven claims. Independent method Claims 1 and 15 read as follows:

"1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least about 4°C and exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals."

"15. A method for stabilizing an edible fat-containing confectionery composition containing a fat capable of polymorphic transformation to form a β polymorph comprising undercooling the composition by at least about 4°C and subjecting said composition to ultrasonic energy in amounts effective to nucleate said composition with stable β -polymorph crystals but insufficient to melt such β -polymorph crystals."

Claims 2 to 14 were dependent, directly or indirectly, on Claim 1. Claims 16 to 27 were dependent, directly or indirectly, on Claim 15.

- II. A first Notice of Opposition was filed against the patent by Unilever N.V. on 24 January 2003. Opponent I requested the revocation of the patent in its full scope, relying on Article 100(a) (lack of novelty and lack of inventive step) and 100(b) EPC (insufficiency of disclosure).
- III. A second Notice of Opposition was filed against the patent by Nestec S.A. on 23 January 2003. Opponent II also requested the revocation of the patent in its full scope, relying on Article 100(a) (lack of novelty and lack of inventive step) and 100(b) EPC (insufficiency of disclosure).

The opposition was *inter alia* supported by the following documents:

- D1 : DE-A- 3 229 937
- D2 : WO-A- 92/20420
- D3 : WO-A- 91/07085
- D7 : Minifie B.W., "Chocolate, Cocoa and Confectionery: Science and Technology", Van Nostrand Reinhold New York, 1989, pp 91, 120, 650-656
- D8 : Walstra P., "Fat Crystallization in Food Structure and Behaviour", Academic Press, 1989, pp 68-85
- D9 : The British Food Manufacturing Industries Research Association, Leatherhead Food RA, Confectionery Products Panel Minutes of Meeting

dates 21 May 2001, p 2, Minute 419

- D10 : Industrial Chocolate Manufacture and Use, S.T. Beckett, Blackie Academic & Professional, 2nd edition, 1994, pp 349-350
- D10' : Statutory Declaration of P.J. Couzens, dated 24 May 2004
- D11 : Academic Press Dictionary of Science and Technology, 1992, p 881
- D12 : Davis and Dimick, JAOCS, 66(10), 1989, pp 1488-1493
- D13 : R.E. Timms, "Physical Chemistry of Fats" in "Fats in Food Products", Ed. Moran and Rajah, Blackie Academic and Professional, 1994, pp 1-27
- D14 : Hemminger and Cammenca, "Methoden der Thermischen Analyse", Springer Verlag Berlin, 1989, pp 110-119
- D15 : Utschik *et al*, Journal of Thermal Analysis, 1988, 33, pp 297-304
- D16 : Courchinoux *et al*, Thermochemica Acta, 1988, 128, pp 45-53
- D17 : Cebula and Smith, JAOCS, 68(8), 1991, pp 591-595
- D18 : The Science of Chocolate, S.T. Beckett, The Royal Society of Chemistry, 2000, pp 88-93
- D19 : The Institute of Shortening and Edible Oils, Chapters 6 and 7 (www.iseo.org/ffo_6-7.htm)

IV. By its decision orally announced on 29 June 2004 and issued in writing on 23 August 2004 the Opposition Division revoked the patent.

The Opposition Division held in the appealed decision that the patent in suit disclosed the invention in a manner sufficiently clear and complete for it to be

carried out by a skilled person in the art (Article 83 EPC), and that the claimed subject-matter of the main and the two auxiliary requests (the latter filed at the oral proceedings of 29 June 2004) was novel over the cited state of the art, namely D1, D2 and D3. Nevertheless, the Opposition Division held that the invention claimed did not involve an inventive step in view of the combination of D3, considered as the closest state of the art, with D2 and routine trials.

The Opposition Division based its decision in relation to the issue of insufficiency of disclosure on the grounds that either the description gave clear indications with regard to the parameters of the invention (such as the conditions of sonication, the definition of under-cooling, the measurement of the melting point) or that the skilled person was able to determine them by routine testing (such as the nucleation and conversion of β' form crystals to β form crystals).

- V. On 22 October 2004 the Patent Proprietor (Appellant) lodged an appeal against the decision of the Opposition Division and paid the appeal fee on the same day.

With the Statement setting out the Grounds of Appeal filed on 22 December 2004, the Appellant argued that the claimed subject-matter involved an inventive step. It argued that D3 could not be combined with D2 alleging that the latter contained a technical prejudice with respect to the use of ultrasound at temperatures of more than 3°C below the melting point of the β polymorph crystals. In its view, under these conditions the skilled person would have expected the

formation of the unstable α and/or β' polymorph crystals. It further argued that D2 and D3 were not enabling disclosures since they did not disclose the direct nucleation of β polymorph crystals, which was the essence of the invention.

With regard to the objection raised under Article 100(b) EPC the Appellant concurred with the decision of the Opposition Division and referred to its letter dated 26 May 2004, which was submitted before the Opposition Division, in which it had stated that the melting point of the β polymorph crystals was the reference point for the under-cooling, and that the accuracy of the melting point measurement, which was about $\pm 1^\circ\text{C}$, was guaranteed by having the hand tempering carried out by a competent chocolatier.

VI. With the letter dated 1 June 2005, Respondent II requested that the decision of the Opposition Division be maintained and the European patent be revoked. It argued that the Board should not only consider the ground of lack of inventive step on which the Opposition Division revoked the patent but equally the grounds of lack of novelty and insufficiency of disclosure that were rejected by the Opposition Division. It referred to T 169/93 (not published in the OJ) and argued that, as it was not adversely affected by the eventual decision of the Opposition Division, it could not have appealed against it even if it disagreed with the decision on novelty and insufficiency of disclosure. Furthermore, Respondent II provided exhaustive arguments on each of the issues raised by the Appellant.

VII. With the letter dated 30 June 2005, Respondent I also requested that the appeal be dismissed not only on the basis of lack of inventive step of the claimed subject-matter but also on the basis of insufficient disclosure and lack of novelty. Moreover, it submitted arguments in support of its point of view on each of the issues raised by the Appellant.

VIII. With the letter dated 10 April 2007, the Appellant argued that the Respondents, by not appealing themselves, were barred from re-opening the issues of sufficiency and/or novelty decided against them in the decision under appeal. It based its argument on G4/93 (OJ 1994, 875) and the case law of the Boards of appeal of the EPO (5th edition, 2006, part VII, Chapter D, paragraph 7.3.2). Additionally it contested the application in the present case of the reasoning set out in T 169/93 on the ground that that case differed from the present appeal.

In support of its arguments concerning the issue of inventive step and sufficiency of disclosure the Appellant filed new documents:

- D43 : extract from a log book of Günther Gaim-Marsoner dated 21 June 1994, and
- D44 : Industrial Chocolate Manufacture and Use, S.T. Beckett, Blackwell Science Ltd., 3rd edition, 1999, p 407

It also submitted nine auxiliary requests and a so-called 10th auxiliary request, by which it wanted to reserve the right, in the event of a negative decision

on Claim 12 of the 9th auxiliary request, to submit amended versions of the auxiliary requests 1 and 3 to 9.

The Appellant argued that the claimed subject-matter of all these requests was not obvious over the combination of D3 with D2 taking into consideration D18, which disclosed that the transition of the β' polymorph crystals to the β polymorph crystals was not as rapid as suggested by D3, and further considering that D43 was evidence for the fact that the method suggested in D2 did not result in the direct nucleation of stable β polymorph crystals.

The Claims 1 of the nine auxiliary requests read as follows (emphasis by the Board):

1st auxiliary request:

"1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by between 4°C and 12°C and exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals."

2nd auxiliary request:

Claim 1 of this request is identical with Claim 15 of the main request, because all previous Claims 1-14 have been cancelled.

3rd auxiliary request:

- "1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least 4°C and subsequently exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals."

4th auxiliary request:

- "1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least 4°C and subsequently exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals, wherein said edible fat composition is a chocolate composition comprising cocoa butter and/or cocoa butter mimetic."

5th auxiliary request:

- "1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least 6°C and subsequently exposing it to ultrasonic energy for

a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals, wherein said edible fat composition is a chocolate composition comprising cocoa butter and/or cocoa butter mimetic."

6th auxiliary request:

- "1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least 4°C and subsequently exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals, wherein said edible fat composition is a chocolate composition comprising cocoa butter."

7th auxiliary request:

- "1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least 6°C and subsequently exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals, wherein said edible

fat composition is a chocolate composition comprising cocoa butter."

8th auxiliary request:

"1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least 4°C and subsequently exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals, wherein said edible fat composition is a chocolate composition comprising cocoa butter and milk fat."

9th auxiliary request:

"1. A method for accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph comprising undercooling said composition by at least 6°C and subsequently exposing it to ultrasonic energy for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals, wherein said edible fat composition is a chocolate composition comprising cocoa butter and milk fat."

IX. With the letter dated 25 April 2007, Respondent I drew attention to decision T 250/04 issued by the same Board on a closely related patent of the Appellant, which it

considered as highly relevant for the issue of sufficiency in the present case. It requested the re-examination of the sufficiency and novelty objections for the reasons as already submitted and in accordance with decision T 169/93.

- X. With the letter dated 23 February 2007, Respondent II withdrew its request for oral proceedings and announced that it would not participate at the scheduled oral proceedings.
- XI. Oral proceedings were held before the Board on 10 May 2007 in the absence of Respondent II.
- XII. The arguments presented by the Appellant in its written submissions and at the oral proceedings may be summarized as follows:
- The issues of sufficiency of disclosure and novelty should not be re-opened.
 - The Respondents by choosing not to file an appeal against the decision of the Opposition Division were barred from re-opening those issues at the appeal stage.
 - The requests of the Respondents by which the novelty and sufficiency were questioned went beyond the Appellant's original appeal request and were therefore inadmissible (prohibition of *reformatio in peius* according to G 9/92 and G 4/93 (OJ 1994, 875) and the case law of the boards of appeal of the EPO (5th edition, 2006)).
 - Decision T 0169/93 did not apply in the present case, since here the main request corresponded to the

granted claims while in that decision the main request corresponded to a set of amended claims.

- The detailed position of the Appellant with regard to the issue of the sufficiency of disclosure was set out in the letter filed in the opposition procedure dated 26 May 2004.
- The Respondents had over-analysed the issue of insufficiency, contrary to T 190/99 (not published in the OJ) which pointed out that "a patent must be construed by a mind willing to understand not a mind desirous of misunderstanding".
- The skilled person would be able to measure the melting point of the β polymorph crystals relying on the types of apparatus and methods available at the filing date of the patent in suit.
- A method to unambiguously determine the melting point of the β polymorph crystals was to put fat samples into ten ovens each maintained at a different temperature, such temperatures ranging in successive increments of 0.5 °C from 33°C to 37°C.
- The temperature range to be used in the ovens was previously determined by hand tempering.
- The melting point of the β polymorph crystals was the temperature of the oven at which the fat sample became liquid.
- D44, written by an expert of the Respondent II itself, referred to the claimed process without raising any issue with regard to its reproducibility.
- The Respondents had not filed any evidence to disprove the sufficiency of disclosure.
- The decision in case T 250/04 (not published in the OJ) was not relevant because the present case did

not contain conflicting definitions of the "melting point".

- The claimed subject-matter was novel over either D1, D2 or D3.
- It also involved an inventive step, since it was only on the basis of hindsight and making a number of inaccurate assumptions that the skilled person would combine D3 with D2.

XIII. The arguments presented by the Respondents may be summarized as follows:

- The appeal should be dismissed not only on the basis of lack of inventive step but also for insufficiency of disclosure and lack of novelty.
- The issue of insufficiency of disclosure raised under Article 100(b) EPC in the notices of opposition and dealt with in the appealed decision should be discussed before the Board.
- This was in accordance with T 169/93, which acknowledged that a Respondent/Opponent who was not adversely affected by the revocation of the patent by the Opposition Division could not appeal, with the consequence that it was allowed to re-open the discussion on novelty and insufficiency of disclosure on appeal.
- The insufficiency issues were:
 - how to determine the amount of undercooling
 - how to achieve the necessary undercooling
 - how to deliver the requirement of the prescribed minimum undercooling across the breadth of the claimed subject-matter

- how to determine the amount of ultrasonic energy required in a given case
 - how to enable the skilled person reliably to convert the β' polymorph crystals to β polymorph crystals, and
 - how to correlate the conditions set out in the claimed subject-matters to fat compositions other than chocolate fats.
- The oven temperature at the formation of a melt from a fat composition comprising polymorph crystals with different melting points did not correspond to the melting temperature of the crystals with the highest melting point (here the β polymorph crystals).
 - Decision T 250/04 (its *ratio decidendi*) was relevant for the issue of insufficiency of disclosure in the present case as it concerned a closely related patent of the Appellant revoked for insufficiency of disclosure.
 - The claimed subject-matter lacked novelty in view of each of D1 to D3.
 - The claimed subject-matter lacked inventive step in view of the obvious combination of D3 with D2.

XIV. The Appellant requested that the decision under appeal be set aside and that the patent be maintained as granted or, alternatively, on the basis of any one of the auxiliary requests filed with the letter dated 10 April 2007.

The Respondents requested that the appeal be dismissed.

Reasons for the Decision

1. Scope of appeal

1.1 The Appellant requested that the issues to be dealt with in the present appeal proceedings be restricted to the issue of inventive step. It argued that none of the Respondents had filed an appeal against the decision of the Opposition Division, who had considered that the claimed invention was sufficiently disclosed and that the claimed subject-matter was novel over the cited prior art.

1.2 The Board rejected this request, since it considered, in agreement with the Respondents, that:

(i) only the Appellant was adversely affected by the appealed decision and it only was therefore allowed to file an appeal against the decision of the Opposition Division and

(ii) the issues of sufficiency of disclosure and novelty could be re-opened without putting the Appellant in a worse situation than if it had not filed the appeal. No worse outcome was possible for the Appellant/Patentee than the revocation of the patent. The rulings in G 9/92 and G 4/93 concerning the prohibition of *reformatio in peius* were therefore not applicable.

1.3 With regard to the first point, namely that the Appellant was the only party allowed to file an appeal against the decision of the Opposition Division, the Board relies on Article 107 EPC which stipulates that "(a)ny party to proceedings adversely affected by a decision may appeal". This article thus allows the

filing of an appeal only by a party adversely affected by a decision.

Since the Opposition Division revoked the European patent for lack of inventive step after having considered the grounds raised in the notices of opposition under Articles 100(a) and 100(b), namely insufficiency of disclosure, lack of novelty and lack of inventive step, the only party adversely affected was the Appellant.

- 1.4 With regard to the second point, that the re-opening of the discussion on sufficiency of disclosure and novelty would not put the Appellant in a worse situation than if it had not filed the appeal and was therefore not against the principle of prohibition of *reformatio in peius* (G 9/92 and G 4/93), the Board notes that the European patent was revoked by the decision of the Opposition Division dated 23 August 2004. In view of Article 68 EPC the effect of this revocation is that all rights conferred by the European patent EP-B-0 765 605 under Article 64 EPC were deemed not to have had effect as from the outset (*ex tunc*). Consequently, since the Appellant lost all the rights deriving from the patent in suit following the decision of the Opposition Division, re-opening the discussion on the issues of sufficiency of disclosure and novelty before the Board could not put the Appellant in a worse situation than if it had not challenged the decision of the Opposition Division.

- 1.5 The Board in following T 169/93 (see points 2.1 to 2.6 of the Reasons) notes that there is nothing in the EPC which would prevent the Respondents from reiterating

grounds for opposition included in their notices of opposition, and to contend that a particular issue in the appealed decision had been wrongly assessed.

Since the grounds of opposition raised by the Respondents comprised the issues of insufficiency of disclosure and lack of novelty, these grounds can be relied upon by the Respondents on appeal.

In this regard the Board also draws attention to the statement in T 327/92 (not published in the OJ; see point 2.1 of the Reasons) according to which the doctrine of *reformatio in peius* cannot be extended to separately apply to each point decided by the Opposition Division.

1.6 The situation arising from a decision to revoke a patent outlined above is legally different from the one in which the patent has been maintained by the Opposition Division in amended form, ie the case of an interlocutory decision of the Opposition Division, where the decision could be appealed by both Patentee and Opponent. It was this situation which led to the conclusion in G 9/92 and G 4/93 that the patent proprietor is primarily restricted during the appeal proceedings to defending the patent in the form in which it was maintained by the Opposition Division in a case where the opponent is the sole appellant.

2. Main request; Sufficiency of disclosure (Article 83 EPC)

2.1 The independent Claims 1 and 15 of the patent in suit relate to methods for:

- accelerating the polymorphic transformation of an edible fat composition containing a fat capable of polymorphic transformation to a β polymorph (Claim 1), or
- stabilizing an edible fat-containing confectionery composition containing a fat capable of polymorphic transformation to form a β polymorph (Claim 15).

In order to achieve these aims it is required that the composition is:

- **under-cooled** by at least about 4°C (both claims), and
- either **exposed to ultrasonic energy** for a time and at a frequency sufficient to induce nucleation of stable β polymorph crystals in said fat without exceeding the melting point of the stable β polymorph crystals (Claim 1),
- or **subjected to ultrasonic energy** in amounts effective to nucleate the composition with stable β polymorph crystals but insufficient to melt such β polymorph crystals (Claim 15).

With regard to the definition of the undercooling, which is not specifically related in the claims to any starting temperature, the Board considers on the basis of the patent specification (page 6, lines 5 to 7; page 7, lines 1-2, 21-25, 28-29; page 8, lines 15-18) and in agreement with all parties that this undercooling is relative to the **melting point** of the β polymorph crystals.

2.2 It is therefore of fundamental importance for the skilled person intending to carry out the claimed invention to have first determined the melting point of the β polymorph crystals.

The Board, relying on the information in D10' (page 8, item 16, first paragraph) and D13 (page 4, item "Polymorphism"; page 9, item "Melting point and solid fat content"), acknowledges that the skilled person in the art is aware that the melting point of the β polymorph crystals is **an empirical property** related to the experimental method of determination and thus not a basic invariable physical property. This is in distinction from the melting point of a pure chemical substance, whose value is essentially independent from the sample preparation and measurement conditions. Reference is made to the statement in the above section of D13: "In particular the melting point [of fat] is directly related to the temperature at which the fat is crystallized or tempered, the higher the temperature the higher the observed melting point. This effect is quite independent of any polymorphic changes."

The considerable influence of the sample's thermal history on the observed melting point value of cocoa butter β polymorph crystals is also apparent from document D12, according to which seed crystals isolated from cocoa butter may have observed melting points even exceeding 60°C (abstract). This dependency of the melting behaviour of isolated β polymorph crystals on their thermal history originates *inter alia* from structural rearrangements of the triglyceride mixture present therein (page 490, left-hand column, last

paragraph) and is thus based on a phenomenon also present in fat compositions comprising cocoa butter.

The influence of the thermal history is also evidenced in the patent in suit, which discloses as melting point of the β polymorph crystals in the Milka® chocolate either 30°C (Table 3) or 30.5°C (Example 1, page 7, lines 21-22) or 29.4°C when hand-tempered (Example 1, page 7, line 36) or 29.7°C when ultrasonic-tempered (Example 1, page 7, line 36).

Additionally, it is apparent from the fact that the melting point of the β polymorph crystals of cocoa butter is lowered when the cocoa butter is part of, eg, a chocolate composition (cf patent specification page 6, Table: 35°C for "pure" cocoa butter; 30°C for Milka®) that the environment of the cocoa butter also plays a role.

Moreover, the observed melting point is also not independent of the apparatus used for its determination as different constructions will transfer heat to the sample differently, thus contributing to the sample's thermal history to a different degree (D17: section "Results and Discussion", especially 2nd paragraph; D14: section 5.2.2.1).

The Board thus concludes that the melting point of the β polymorph crystals in a specific edible fat/fat-containing composition, preferably a confectionery composition, cannot be defined independently from the precise conditions of the sample preparation and the measurement method used for its determination.

2.3 Article 83 EPC requires that the European patent application discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Therefore the question arises whether the term "melting point of the β polymorph" as it is used according to claimed invention is sufficiently specified by its manner of determination.

2.4 The only relevant information in that respect in the patent specification is to be found in paragraph [0041], relating to the DTA technique (differential thermal analysis). *De facto*, the only practical experimental advice concerning the melting point determination disclosed in this paragraph specifies two essential steps (page 6, lines 2 to 5):

- a first step of careful hand tempering in optimal fashion of the fat-based mass, which in the particular case of paragraph [0041] is a chocolate, and
- a second step of processing the hand tempered mass by differential thermal analysis (DTA).

The first step, though qualifying the hand tempering as "careful" and "carried out in optimal fashion", fails to give any details defining the actual conditions of hand tempering in an objectively verifiable manner.

However, the complexity of tempering, its dependency on the applied conditions and finally its influence on the properties of the resulting fat composition are underlined in the patent in suit. In this respect the

Board refers to the patent specification, which mentions that "time, temperature and processing conditions are critical for proper chocolate tempering" (page 4, line 45), that "(t)he complex effects observed in cocoa butter blends further complicate the development of tempering procedures for the manufacture of chocolate products" (page 5, lines 5-6), that "many tempering devices are complex ... to operate" (page 4, line 46), and that "successful tempering leads to a number of desirable characteristics in chocolate" (page 4, line 56).

With regard to the differential thermal analysis the Board remarks that the observed result, be it the minimum of the trough of the DTA plot or some other point of this curve, is not a *per se* repeatable value for the "melting point of the β polymorph" (page 6, lines 3-5).

As set out above in connection with the information contained in D13, the manner of tempering has an important impact on the fat melting characteristics, independent of any polymorphic changes; it is therefore evident that "careful hand tempering" "in an optimal fashion" is an instruction that does not lead to an objectively verifiable or repeatable melting point.

Furthermore, given the wide range for the melting point of the β polymorph crystals in the literature cited in the patent specification, which according to Table 2 may be from 20° to 35°C, and taking account of the even wider melting point variations obtained according to D12 (see above), it is clear that the observed melting points of the β polymorph crystals in an edible fat

composition (Claim 1) or in an edible fat-containing confectionery composition (Claim 15) may vary within a range of several degrees centigrade. That this is realistic is also confirmed by the difference between the melting points for Milka® indicated in Table 3 (30°C) and on page 6, lines 22 and 36 (30.5°C, 29.4°C and 29.7°C) of the patent specification itself, values obtained for the same confectionary mass by the Patentee's experienced technicians.

- 2.5 It follows that the requirements of the claimed subject-matter (i) to maintain a temperature difference of at least 4°C and (ii) not to exceed the melting point of the β polymorph during exposure to ultrasonic energy, cannot be realized in a reliably repeatable manner because there is no agreed standard hand tempering treatment or standard melting point measurement for fat compositions capable of polymorphic transformation to a β polymorph and because the patent specification is devoid of any sufficiently precise information in these respects which could serve as a guidance for the skilled person.
- 2.6 It is thus clear that on the basis of the instructions given by the patent specification it is not possible to implement the invention within the whole of its claimed scope.
- 2.7 This conclusion is not altered by the Appellant's argument that the skilled person in the art would have no difficulty in determining the melting point of the β polymorph crystals using methods known in the art or belonging to his general technical knowledge such as by

using a series of temperature calibrated ovens (cf section XII above).

On the one hand this argument finds no support in the patent or the available state of the art and on the other hand it is not *prima facie* convincing that the visually perceived formation of a liquid phase by melting of a fat-containing composition will necessarily correspond to the melting point of the highest melting polymorph, namely the β polymorph (patent, table 3) because in the presence of lower melting polymorphs, a realistic situation, these will start melting at lower temperatures. Furthermore, this argument of the Appellant does not get over the fundamental deficiency of the patent specification concerning the missing information about the sample preparation.

2.8 The Board does also not accept the Appellant's argument that the skilled person could take any observed melting point for the point of departure for the subsequent undercooling. This contention reduces the claimed requirement to a purely subjective recommendation, a concept contrary to the basic idea of granting a clearly delimited monopoly for the solution of an objective technical problem by concrete technical measures.

2.9 Furthermore the Board does not concur with the Appellant who argues on the basis of T 190/99 that the Respondents have "over-analysed" the issue of sufficiency and have not construed the invention with a mind willing to understand but with a mind desirous of misunderstanding. The Board points out that a mind

willing to understand is not a mind conjuring up features not present in the originally filed application and not belonging to the general common knowledge of the skilled worker in the particular art. This argument of the Appellant appears to originate from the misinterpretation that denying sufficiency of disclosure should amount to denying the skilled person's capability of manufacturing an edible fat composition, eg a chocolate, by undercooling and sonication under specific conditions. However, these conditions are not within the patent's disclosure.

- 2.10 Further the Board does not agree with the Appellant that the reference in document D44, written by an expert of Respondent II, to the principles underlying the claimed method amounted to a recognition of the sufficiency of the present patent's disclosure.

Notwithstanding the fact that document D44 relates to the method of the closely related patent of the Appellant, dealt with in decision T 250/04 issued by the same Board, this reference only discloses in general terms the use of ultrasound in confectionary masses in order to retard fat bloom once the mass has been cooled to at least 3°C below the melting point of the required crystalline state. In no way can this statement be used as a confirmation of the feasibility of the claimed method.

- 2.11 As to the Appellant's argument that the Respondents have not filed any evidence to support their allegations, this is at variance with the large number of documents submitted in relation to the issue of sufficiency before the Opposition Division. As far as

this argument concerns the lack of experimental evidence, such evidence is not obligatory. Under Article 117 EPC any party may choose the evidence it finds appropriate.

2.12 It follows that the patent in suit does not satisfy the requirements of Article 83 EPC.

3. Auxiliary requests 1 to 9

Claim 1 of all auxiliary requests, in the same manner as Claim 1 of the main request, comprises the steps of undercooling the edible fat composition by a certain number of degrees centigrade and then exposing it to ultrasonic energy without exceeding the melting point of the stable β polymorph crystals.

Thus Claim 1 of the 1st auxiliary request comprises an undercooling of the edible fat composition by between 4°C and 12°C; that of the 2nd auxiliary request an undercooling by at least about 4°C; that of 3rd, 4th, 6th and 8th auxiliary requests an undercooling by at least 4°C; that of the 5th, 7th and 9th auxiliary requests an undercooling by at least 6°C.

Consequently the reasoning in relation to the main request applies *mutatis mutandis* to the subject-matter of each of auxiliary requests 1 to 9. Therefore auxiliary requests 1 to 9 do not disclose the claimed invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

4. As all operative requests, namely the main and the nine auxiliary requests, have been found to contravene the

requirement of Article 83 EPC, none of the Appellant's requests is allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Röhn

P. Kitzmantel