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Datasheet for the decision of 8 February 2007

Case Number: T 0250/04 - 3.3.09

Application Number: 95306833.5

Publication Number: 0765606

IPC: A23G 1/18

Language of the proceedings: EN

Title of invention:
Process for retarding fat bloom in fat-based confectionery masses

Patentee:
Kraft Foods R & D, Inc.

Opponent:
NESTEC S.A.

Headword:
-

Relevant legal provisions:
EPC Art. 83
RPBA Art. 10(a)

Keyword:
"Main request - sufficiency of disclosure (no)"
"Auxiliary request - admissibility (no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0250/04 - 3.3.09

D E C I S I O N
of the Technical Board of Appeal 3.3.09
of 8 February 2007

Appellant: (Patent Proprietor)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 10 December 2003 revoking European patent No. 0765606 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 0 765 606 in respect of European patent application No 95306833.5 in the name of Kraft Foods R & D, Inc., which had been filed on 27 September 1995, was announced on 13 June 2001 (Bulletin 2001/24). The patent, entitled "Process for retarding fat bloom in fat-based confectionery masses", was granted with twenty-four claims. Independent method Claims 1 and 13 read as follows:

"1. A method for retarding bloom in a fat-based confectionery mass wherein the fat can crystallize as a β polymorph comprising undercooling the mass by at least about 3°C below the melting point of the β polymorph and subjecting said mass to ultrasonic energy in amounts effective to generate stable crystals of said β polymorph in said mass."

"13. A method for retarding bloom in a chocolate mass containing fat comprising cocoa butter, said method comprising the steps of undercooling the mass by at least about 4°C below the melting point of the β polymorph of the fat and subjecting said undercooled mass to ultrasonic energy in amounts effective to induce formation of stable crystals of the β polymorph in said undercooled mass without raising the temperature of said mass above the melting point of the β polymorph."

Claims 2 to 12 were dependent, directly or indirectly, on Claim 1. Claims 14 to 24 were dependent, directly or indirectly, on Claim 13.

II. A Notice of Opposition was filed against the patent by Nestec SA on 12 March 2002. The Opponent 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:

D2: WO 92/20420

D6: Cebula and Smith, JAOCS, 68(8), 1991, pp 591-595

D9: Hemminger and Cammenca "Methoden der Thermischen Analyse", Springer Verlag Berlin, 1989, pp 110-119

III. By its decision orally announced on 21 October 2003 and issued in writing on 10 December 2003 the Opposition Division revoked the patent.

IV. The Opposition Division held in the appealed decision that the patent in suit did not disclose 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), essentially because the measurement method of the melting point of the β polymorph of a fat-based confectionery product was not clearly derivable from the patent specification, inter alia in view of the contradiction between paragraphs [0035] and [0041].

V. On 19 February 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 19 April 2004, the Appellant argued that the evidence in the patent specification was in agreement with the relevant references in the prior art and also showed that the claimed ultrasonic treatment led to the formation of β polymorphs identifiable by the position of the trough of the DTA curve, whose minimum corresponded to the known melting point of the β polymorph.

With regard to the further grounds of opposition the Appellant maintained its arguments submitted before the Opposition Division.

In order to illustrate the common general knowledge on the issue of melting point determination, the Appellant with its letter dated 8 January 2007 cited for the first time 23 documents.

VI. With a letter dated 6 September 2004, the Respondent defended the decision under appeal on the issue of sufficiency of disclosure and submitted *inter alia* further documents:

D13: Statutory Declaration of P J Couzens, dated 24 May 2004

D15: Davis and Dimick, JAOCS, 66(10), 1989, pp 1488-1493

D16: Timms, "Physical Chemistry of Fats" in "Fats in Food Products", Ed. Moran and Rajah, Blackie Academic and Professional, 1994, pp 1-27

The Respondent essentially argued that the information in the patent specification concerning the determination of the melting point was inconsistent and insufficiently precise with regard to the conditions of hand tempering and the accuracy of the DTA measurement. This deficiency could not be made good by the qualification "about" for the difference between the temperature of the undercooling and the melting point of the β polymorph. Anyway, the melting point of the fat was an empirical property which depended on the method of determination, especially on the sample's thermal history, and was not a precise physical property.

With a letter dated 7 November 2006 the Respondent withdrew its request for oral proceedings and announced that it would not participate at such oral proceedings.

VII. On 8 February 2007 oral proceedings were held before the Board in the absence of the Respondent, in the course of which the Appellant submitted a new auxiliary request.

VIII. The arguments put forward by the Appellant in its written submissions and at the oral proceedings can be summarized as follows:

– The information missing from the patent specification concerning the conditions of the method used for measuring the melting point of the β polymorph crystals belonged to the general technical knowledge of the person skilled in the art.

– The skilled person in the art, the confiseur, was able on the basis of his normal skills to carry out an optimal hand tempering of the confectionery mass.

– The minimum of the trough of the DTA plot obtained from a carefully hand tempered confectionery mass corresponded to the melting point of the β polymorph. This was supported by the experimental evidence of the patent in suit when compared with the melting point of the β polymorphs cited in the state of the art mentioned in the patent specification.

– In view of the disclosure of D2 (pages 12-13) the undercooling of tempered chocolate was known to the person skilled in the art.

– The melting point of the β polymorph depended on the hand tempering recipe and on the origin of the cocoa butter.

– The precision required to arrive at a temperature drop of at least 3°C for the undercooled mass was the same as that which the skilled person would usually apply in order to ensure such a temperature drop, and could be measured using a normal thermometer.

– The auxiliary request should be admitted since it addressed the objection raised by the opposition division.

IX. The arguments put forward by the Respondent in its written submissions can be summarized as follows:

- The melting point was not a defined parameter in the patent in suit and the skilled person in the art was not able to undercool a fat-based confectionery mass as required by Claim 1.

- The patent specification was internally inconsistent with regard to the definition of the term "melting point" in view of paragraphs [0035] and [0041].

- On the basis of D13, the trough of the DTA plot did not represent the temperature at which the last detectable crystal melted, since this temperature was the temperature at which the DTA returned to zero.

- The DTA method did not provide reproducible results for the determination of the melting point of the β polymorph, even if it was accepted that this method allowed a consistent definition of the melting point.

- D13 disclosed that fats had a broad melting range and that the melting point of a fat was an empirical property related to the experimental method of determination rather than to a basic physical property.

- In view of D13 there was no single way of chocolate hand tempering and different levels of temper were used depending on intended quality of the chocolate.

– D16 disclosed that the melting point was directly related to the temperature at which the fat was crystallized and that it was thus dependent on the thermal history of the sample. Consequently, the conditions of hand tempering would affect the melting point of the β polymorph.

X. The Appellant requested that the decision under appeal be set aside and that the patent be maintained as granted or on the basis of the auxiliary request filed at the oral proceedings before the Board.

The Respondent requested that the appeal be dismissed. It also requested that, if the Board acknowledged the sufficiency of disclosure, the case should not be remitted to the Opposition Division, but that the further grounds of opposition should be considered, taking account of the decision on novelty and inventive step issued in the opposition of the parallel case concerning the EP 0 765 605.

Reasons for the Decision

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

1.1 Independent Claim 1 of the patent in suit relates to a method for retarding blooming in a fat-based confectionery mass by generating stable crystals of the β polymorph. To achieve this aim the confectionery mass is:

– undercooled by at least about 3°C below the melting point of the β polymorph and then

– subjected to ultrasonic energy in amounts effective to generate such crystals.

The claimed method defines the degree of undercooling of the confectionery mass in a relative manner. This means that first the melting point of the β polymorph has to be determined and then the undercooling of the confectionery mass by at least about 3°C below the melting point of the β polymorph should be carried out, which is then followed by the ultrasonic step.

1.2 The determination of the melting point of the β polymorph is therefore a key issue for carrying out the claimed invention.

In this respect the Board *inter alia* relying on the information in D13 (page 8, item 16, first paragraph) and D16 (page 4, item "Polymorphism"; page 9, item "Melting point and solid fat content"), appreciates that the skilled person in the art is aware that the melting point of the β polymorph 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 afore-mentioned section of D16: "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 is also apparent from document D15, 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.

Additionally, it is apparent from the fact that the melting point of the β polymorph of cocoa butter is lowered when the coca butter is part of eg a chocolate composition (cf. patent specification Table 4: 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 (D6: section "Results and Discussion", especially 2nd paragraph; D9: section 5.2.2.1).

1.3 The Board thus concludes that the melting point of the β polymorph for a specific fat-based confectionery mass cannot be defined independently from the precise conditions of the sample preparation and the measurement method used for its determination.

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.

The only relevant information in that respect in the patent specification is to be found in paragraphs [0035] and [0041] both relating, *albeit* somewhat differently, to the DTA technique (differential thermal analysis). While the decision under appeal on this issue mainly relied on the purported inconsistency of these two statements (one pointing at the minimum of the DTA curve, the other having the additional condition that the "last detectable crystal melts"), the Board draws the line at the more fundamental issue outlined above.

De facto, the only practical experimental advice concerning the melting point determination disclosed in the patent in suit, ie in paragraph [0035], specifies two essential steps (page 5, line 58 to page 6, line 1):

- a first step of careful hand tempering in optimal fashion of the fat-based confectionery mass, 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. It follows 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 repeatable value for the "melting point of the β polymorph" (page 6, lines 1-3).

As set out above in connection with the information contained in D16, the manner of tempering has an important impact on the fat melting characteristics independent of any polymorphic changes; it is therefore evident that "careful 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 in the literature cited in the patent specification, which according to Table 3 may be from 20° to 35°C and taking account of the even wider melting point variations obtained according to D15 (see above), it is clear that observed melting points of the β polymorph in a confectionary mass may vary within a range of several degrees C. That this is realistic is also confirmed by the difference between the melting points for Milka® indicated in Table 4 (30°C) and on page 6, lines 37 to 38 (31°C) of the patent specification itself, values obtained for the same confectionary mass by the Patentee's experienced technicians. It follows that the requirement of the claimed subject-matter to maintain a temperature difference of at least 3°C cannot be realised in a reliably repeatable manner.

1.4 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 its whole claimed scope.

1.5 This conclusion is not invalidated by the Appellant's argument that the skilled person in the art, the confiseur, would be able to carry out a "careful/optimal hand tempering". The reason is that there is no agreed standard treatment which could serve as a guidance in order to ensure the carrying out of the claimed method in an objectively repeatable manner.

1.6 Likewise the Board does not concur with 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 delimitated monopoly for the solution of an objective technical problem by concrete technical measures.

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

2. *Auxiliary request*

The auxiliary request filed at the oral proceedings was not admitted into the procedure as it was late filed (Article 10(a) RPBA), was not directed to overcome the objections raised against the main request and, moreover, *prima facie* raised doubts as to the

fulfilment of the requirements of Articles 84 and 123 EPC.

There were thus no exceptional reasons justifying the admission of this request at this late stage (Article 10(b) RPBA).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Röhn P. Kitzmantel