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**Datasheet for the decision
of 9 February 2023**

Case Number: T 1093/21 - 3.3.09

Application Number: 05707896.6

Publication Number: 1845802

IPC: A23P10/40, A23C1/04, A23C1/05,
A23L29/219, A23L33/00

Language of the proceedings: EN

Title of invention:
PROCESS FOR PREPARING NUTRITIONAL PRODUCTS

Patent Proprietor:
Société des Produits Nestlé S.A.

Opponent:
N.V. Nutricia

Headword:
Process for preparing nutritional products/NESTLÉ

Relevant legal provisions:
EPC Art. 56
RPBA 2020 Art. 12(4), 12(6)

Keyword:

Amendment to case - amendment within meaning of Art. 12(4) RPBA
2020 - suitability of amendment to address issues (no)
Claims - interpretation in light of the description
Inventive step - main request (no) no distinguishing feature -
auxiliary request (no)

Decisions cited:

G 0007/95



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Case Number: T 1093/21 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 9 February 2023

Appellant: Société des Produits Nestlé S.A.
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 11 May 2021
revoking European patent No. 1845802 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman N. Obrovski
Members: F. Rinaldi
C. Meiners

Summary of Facts and Submissions

- I. This decision concerns the appeal filed by the patent proprietor (appellant) against the decision of the opposition division to revoke European patent No. 1 845 802.
- II. In the notice of opposition, the opponent had requested that the patent be revoked under Article 100(a) EPC for lack of inventive step, among other things.
- III. The following documents are relevant to the appeal proceedings and the decision:
- D14: E. Refstrup, "Recent Advances in Agglomeration during Spray Drying", translation of reprint No. S-351 from "Zeitschrift für Lebensmitteltechnologie" - ZFL, October 1992
- D18: R.E.M. Verdurmen *et al.*, "Simulation of agglomeration in spray dryers: the EDECAD project", *Le Lait*, 85 (4-5), 2005, 343-351
- D19: V. Westergaard, "Milk Powder Technology - Evaporation and Spray Drying", 5th edn. Copenhagen: Niro A/S, 2004
- D21: Declaration Dale Sanders (22 December 2020)
- D24: B. Xia *et al.*, "Applications of computational fluid dynamics (CFD) in the food industry: a review", *Computers and Electronics in Agriculture*, 34, 2002, 5-24
- D25: H. Usui *et al.*, "Turbulent flow in a spray drying chamber", *Journal of chemical engineering of Japan*, 18(3), 1985, 243-247

D26: F.G. Kieviet *et al.*, "Measurement and modelling of the air flow pattern in a pilot-plant spray dryer", *Trans IChemE*, 75(A), 1997, 321-328

IV. In the decision under appeal, the opposition division decided not to admit the fresh ground for opposition under Article 100(a) EPC regarding lack of novelty. Moreover, claim 1 of the patent as granted and claim 1 of auxiliary request 1, filed at the oral proceedings, were found to lack inventive step.

V. The following claims are relevant for this decision:

Claim 1 of the patent as granted (main request) reads:

"A process for preparing a carbohydrate-containing nutritional powder, the process comprising preparing a liquid concentrate with a carbohydrate content reduced by comparison with the carbohydrate content of the final nutritional powder, spraying the liquid concentrate into a spray-drier and incorporating an amount of the carbohydrate corresponding to the difference between the carbohydrate content of the liquid concentrate and the carbohydrate content of the final nutritional powder into the nutritional product by blowing solid carbohydrate particles into the zone of turbulence of the spray dryer and removing the carbohydrate-containing nutritional powder from the spray-drier, wherein the nutritional powder is selected from a growing-up milk, an instant milk powder, a functional milk powder, an infant formula or a healthcare formula, wherein the entire content of a specific carbohydrate in the product is blown into the spray dryer, and wherein the specific carbohydrate blown into the spray-drier is pre-gelatinised starch."

Claim 1 of auxiliary request 1 is based on claim 1 as granted, and further specifies that "up to 40% of the carbohydrate content of the product is blown into the spray dryer".

VI. The appellant's arguments relevant to the present decision are summarised as follows:

- Documents D24 to D26 were filed on appeal in response to the opposition division's decision. These documents showed that the skilled person would have been able to determine the location of the zones of laminar and turbulent flow in spray dryers.
- Claim 1 differed from D19 in that the pre-gelatinised starch was blown into the zone of turbulence of the spray dryer. In D19, the starch was blown into the dryer via the fines return system which was located at the top of the spray dryer. This was not the zone of turbulence of the spray dryer.

VII. The respondent's arguments relevant to the present decision are summarised as follows.

- Documents D24 to D26 could and should have been filed earlier. Moreover, these documents were not relevant to the case.
- There was no difference between claim 1 as granted and D19. In D19, the fines were blown into the spray dryer at two locations, at the top of the spray dryer and at the bottom, i.e. the conical part of the drying chamber. The process led to

spontaneous secondary agglomeration, which involved turbulence also at the top of the spray dryer.

VIII. Final requests

The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request) or on the basis of auxiliary request 1 underlying the decision under appeal and re-filed with the statement setting out the grounds of appeal.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. *Patent in suit*

The patent relates to a process for preparing a carbohydrate-containing nutritional powder by spray-drying (paragraph [0001]). A feature of claim 1 is that solid particles of pre-gelatinised starch are blown into the zone of turbulence of the spray dryer.

2. *Admittance of D24 to D26*

2.1 The appellant filed documents D24 to D26 with its statement setting out the grounds of appeal. It requested that these documents be admitted on appeal.

2.2 The appellant argued that the discussion at the oral proceedings before the opposition division focused on the skilled person's understanding of the term "zone of

turbulence" in claim 1. The issue was whether the term would have been clear to the skilled person and suitable for restricting the claimed subject-matter relative to the prior art. The sole purpose of D24 to D26 was to reinforce the argument that, in the appellant's view, the skilled person would have been able to determine the location of the laminar and turbulent zones in spray dryers and that they would have done so by applying computational fluid dynamics (CFD). The appellant also stated that it had only become apparent during the oral proceedings before the opposition division that the term "zone of turbulence" would not be acknowledged by the opposition division as a distinguishing feature.

- 2.3 The respondent argued that documents D24 to D26 should not be admitted into the proceedings. There was no reason why these documents were filed only on appeal and they did not add anything of relevance to the case.
- 2.4 The board does not consider documents D24 to D26 to constitute a mere refining or reinforcement of an argument presented in the opposition proceedings. Rather, they are new pieces of evidence, the contents of which had not been discussed before. They should also have been filed earlier.
- 2.5 The opposition division's preliminary opinion in the annex to the summons to oral proceedings had already stated that "the sole objective technical difference" between claim 1 as granted and D19 was the type of starch used. It follows from this statement that the opposition division did not consider the feature concerning the zone of turbulence to be a distinguishing feature over D19. Apparently the patent proprietor also recognised this. It responded to the

opposition division's preliminary opinion by filing D21. This document is a declaration from a technical expert employed by the patent proprietor. The document primarily explains that the feature concerning the turbulent zone is not disclosed in D19. In view of this, documents D24 to D26 could and should also have been filed at that time.

2.6 Moreover, documents D24 to D26 are not *prima facie* relevant to the issue under investigation. The decisive question in the case at hand is whether in D19 the solid carbohydrate particles (i.e. the pre-gelatinised starch) are blown into the zone of turbulence of the spray dryer. The answer to this question does not depend on the contents of D24 to D26.

2.7 In particular, there is no disclosure in the patent that the zone of turbulence is identified by using CFD modelling. Rather, the patent states that "[t]he location in the spray dryer at which the solid carbohydrate particles are introduced is not critical" (paragraph [0010]). Paragraph [0012] goes on to explain how to introduce the pre-gelatinised starch:

"Most spray dryers are equipped with apparatus to allow the re-introduction of so-called fines into the spray dryer. [...] It has for many years been the practice to collect these small particles for example by filtration and blow them back into the spray dryer to re-agglomerate with newly introduced liquid concentrate. [...] If a spray dryer is equipped with apparatus for blowing back fines, this apparatus may advantageously also be used for introduction of the solid carbohydrate particles according to the process of the present invention."

2.8 In light of this teaching, the skilled person would have understood that the zone of turbulence within the meaning of claim 1 is wherever fines are blown back into the spray dryer. CFD modelling does not play any role in this context.

2.9 Thus, documents D24 to D26 were not admitted into the appeal proceedings (Article 12(4) and (6) RPBA 2020).

3. *Main request - inventive step*

3.1 In the decision under appeal, the opposition division identified two differences in claim 1 as granted over D19, namely that the starch is pre-gelatinised and that the starch particles are blown (i.e. not sucked) into the spray dryer. It did not, however, consider the claimed subject-matter inventive.

3.2 The appellant contested this decision. Deviating from the opposition division's assessment, it argued that the only distinguishing feature of claim 1 over D19 was that the particles of pre-gelatinised starch were blown into the zone of turbulence of the spray dryer.

3.3 Specifically, the appellant acknowledged that D19 disclosed a process for manufacturing baby foods in which *pre-gelatinised* starch was added via a fines return system (page 293, first bullet point). In its view, this implied that the starch was *blown* into the dryer, a Multi-Stage Dryer, at the top of the spray dryer. Thus, the starch was blown into the spray dryer by a laminar plug-flow air stream. This, however, meant that the pre-gelatinised starch was blown into the laminar zone of the spray dryer, and not into the zone of turbulence.

- 3.4 The respondent's view was that there was no distinguishing feature over D19.
- 3.5 For the board, the only potential distinguishing feature to consider is the one identified by the appellant.
- 3.6 There is no consensus between the parties as to what the term "zone of turbulence" denotes. In the decision under appeal, the opposition division did not see any clear meaning in this term and did not take it into account as a distinguishing feature.
- 3.7 The question to be answered is whether in D19 the pre-gelatinised starch is introduced in a part of the spray dryer that is the zone of turbulence.
- 3.8 The appellant argued that the fines return system mentioned in D19 was located solely at the top of the spray dryer. The fines, i.e. pre-gelatinised starch particles, were thus only introduced in the laminar zone of the spray dryer.
- 3.9 The board does not share the appellant's view. D19 describes a Multi-Stage Dryer system and how to operate it (pages 141 to 152). A relevant aspect concerning the dosing of starch via the fines return system taught on page 293 is that the fines are returned into the spray dryer at two points. These are at the top of the spray dryer and at its bottom, i.e. at the conical part of the drying chamber. This process causes colliding streams and leads to spontaneous secondary agglomeration which also involves turbulence at the top of the spray dryer, as shown in Figure 86c (page 152).

3.10 This is consistent with the instruction in the patent. As discussed above (see point 2.7), paragraph [0012] of the patent discloses that the pre-gelatinised starch is introduced into the spray dryer via the apparatus for blowing back fines. Such a process is according to the invention. This confirms that introducing the pre-gelatinised starch via a fines return system qualifies as introducing it into a spray dryer's zone of turbulence.

3.11 The appellant argued that paragraph [0012] of the patent had by mistake not been adapted during the examination proceedings leading to grant. The statement in this paragraph was not meant to define what the zone of turbulence was.

3.12 This argument is not convincing.

3.12.1 Firstly, interpreting a claimed feature in light of the description requires that account be taken of the description as it is actually contained in the file. Therefore, when interpreting claim 1 of the patent as granted, account must be taken of paragraph [0012] as it is contained in the patent specification.

The board also notes that the appellant adapted the description before grant of the patent. In particular, the examples are stated not to be according to the invention. If the appellant had wished to introduce further adaptations during the examination proceedings, then it should have done so. A mere intention in this regard is irrelevant. The patent specification has to be taken at face value.

3.12.2 Secondly, the teaching in paragraph [0012] of the patent specification makes technical sense and is

confirmed by the closest prior art D19. Moreover, dependent claim 4 of the patent as granted also specifies that a blow back apparatus is used for introducing the particles of pre-gelatinised starch into the spray dryer.

3.13 The appellant further argued that D14 (Figure 5) and D18 (Figure 2) confirmed that the term fines return exclusively meant introducing particles at the top of the spray dryer. This understanding should accordingly also be applied to document D19.

3.14 However, this argument fails to convince the board.

3.14.1 It is correct that, in Figure 5 of D14, the reference numeral denoting the fines return is located close to an arrow pointing to the top of the spray dryer. What must be assessed, however, is whether the subject-matter of claim 1 includes a distinguishing feature over the technical teaching in D19, not whether it includes one over the technical teaching in D14.

3.14.2 Figure 5 of D14 does not change the technical teaching of D19 as described in point 3.9 above. D19 is a handbook on spray drying. Its teaching does not require any re-interpretation in light of an earlier scientific publication, such as D14.

3.14.3 Even if D14 were to be considered, the drawing of the Multi-Stage Dryer used in Figure 5 substantially corresponds to the one shown in D19 (page 146). The passage in D14 in which Figure 5 is described sets out that, due to the special air flow pattern, considerable spontaneous, secondary agglomeration takes place in the dryer. In other words, the description in D14 of how the Multi-Stage Dryer operates is in this regard

identical to that given in D19 (see also above, point 3.9).

- 3.14.4 D18 does not seem to be of any relevance to the interpretation of D19. In any case, the spray dryer depicted in D18 provides a system for the introduction of matter from a cyclone at the conical end of the spray dryer. It would thus seem that the spray dryer allows the introduction of fines at the conical end of the spray dryer, as in the Multi-Stage Dryers of D19 and D14.
- 3.15 In sum, the fines in D19 are introduced into the drying chamber of a Multi-Stage Dryer not only at the top, but also near the bottom. According to the explanations of the patent proprietor's expert (D21, point 16) "the 'turbulent zone' exists closer to the walls and bottom of the drying chamber". Furthermore, as set out above, introducing the particles at the bottom of the spray dryer leads to an air flow in the spray dryer which causes a spontaneous secondary agglomeration at the top of the spray dryer.
- 3.16 In view of this, introducing pre-gelatinised starch into the spray dryer via a fines return system as disclosed in D19 necessarily means that the starch is blown into the zone of turbulence.
- 3.17 Therefore, claim 1 has no distinguishing feature over the disclosure of the closest prior art D19.
- 3.18 According to the Enlarged Board of Appeal, the ground for opposition of lack of novelty - which is not in the proceedings - is a fresh ground for opposition in relation to the ground of lack of inventive step (G 7/95, Reasons 7.1).

3.19 However, the Enlarged Board also stated the following (G 7/95, Reasons 7.2):

"[I]f the closest prior art document destroys the novelty of the claimed subject-matter, such subject-matter obviously cannot involve an inventive step. Therefore, a finding of lack of novelty in such circumstances inevitably results in such subject-matter being unallowable on the ground of lack of inventive step." (emphasis added by the current board).

3.20 Therefore, the subject-matter of claim 1 lacks an inventive step due to the absence of any distinguishing feature. The ground for opposition under Article 100(a) in conjunction with Article 56 EPC prejudices maintenance of the patent.

4. *Auxiliary request 1*

4.1 In claim 1 of auxiliary request 1, the amount of pre-gelatinised starch blown into the spray dryer is restricted with respect to the total carbohydrate content of the nutritional powder.

4.2 However, the restricted amount is not associated with any specific technical effect. There is no evidence in this regard.

4.3 Consequently, the technical problem is to provide an alternative process.

4.4 The appellant presented a calculation showing that the composition exemplified on page 291 of D19, which included 35 to 45% starch, effectively comprised 57% starch based on the total carbohydrate. In its view,

the teaching of D19 was not compatible with that of the patent, which was directed to a process for preparing a low-starch nutritional powder.

- 4.5 This fails to convince the board. The skilled person reading D19 is not prevented from using a lower amount of starch (e.g. 40% based on the total carbohydrate content of the nutritional powder). The skilled person would expect that the process of D19 (page 293, first bullet point) would work even when the amounts of ingredients used are slightly modified.
- 4.6 The skilled person would also know from common general knowledge (e.g. D19) that starch is difficult to handle in a spray-drying process, since it is prone to stickiness. Reducing the amount of a component which is difficult to handle when used at a high concentration is a measure that the skilled person would straightforwardly consider. Such a measure does not render the suitable process set out in D19 unsuitable.
- 4.7 Therefore, the subject-matter of claim 1 of auxiliary request 1 does not involve an inventive step either (Article 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



M. Schalow

N. Obrovski

Decision electronically authenticated