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Datasheet for the decision of 3 May 2018

Case Number: T 0495/12 - 3.3.01

Application Number: 02774763.3

Publication Number: 1443823

IPC: A21D10/00, A21D8/04, A21D2/16, A21D2/22, A21D2/08, A21D2/02

Language of the proceedings: EN

Title of invention:
A LIQUID BREAD IMPROVER, THE USE AND THE PROCESS FOR PRODUCING THEREOF

Patent Proprietor:
DuPont Nutrition Biosciences ApS

Opponent:
Steinecke, Peter

Headword:
Bread improver/DUPONT

Relevant legal provisions:
RPBA Art. 15(3), 13(1)
EPC Art. 83, 100(b), 54, 56, 100(a), 84, 123(2), 123(3)

Keyword:
Oral proceedings - held in absence of appellant
Late-filed evidence - not admitted
Sufficiency of disclosure - (yes)
Novelty - (yes)
Inventive step - (yes: auxiliary request 7)
Claims - clarity after amendment (no: auxiliary request 6; yes: auxiliary request 7)
Amendments - allowable (yes: auxiliary request 7)

Decisions cited:
G 0004/92, G 0003/14

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0495/12 - 3.3.01

D E C I S I O N
of Technical Board of Appeal 3.3.01
of 3 May 2018

Appellant: (Opponent)	Steinecke, Peter P.O. Box 310140 80102 Munich (DE)
Representative:	Nederlandsch Octrooibureau P.O. Box 29720 2502 LS The Hague (NL)
Respondent: (Patent Proprietor)	DuPont Nutrition Biosciences ApS Langebrogade 1 1411 Copenhagen K (DK)
Representative:	D Young & Co LLP 120 Holborn London EC1N 2DY (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 20 December 2011 rejecting the opposition filed against European patent No. 1443823 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	A. Lindner
Members:	T. Sommerfeld
	M. Blasi

Summary of Facts and Submissions

I. European patent 1443823 is based on patent application 02774763.3, which was filed as an international application published as WO 2003/039261. The patent is entitled "A liquid bread improver, the use and the process for producing thereof", and was granted with 23 claims.

Independent claims 1, 21 and 22 as granted read as follows:

"1. A water-free low viscous liquid bread improver comprising
i) a liquid emulsifier based on esters of hydroxy polycarboxylic acid derivatives having a viscosity of below 2,000 cP at ambient temperature;
ii) a glyceride based stabiliser;
iii) additives; and
iii [sic]) less than 20% oil."

"21. Use of a water-free low viscous liquid bread improver comprising a liquid emulsifier based on esters of hydroxy polycarboxylic acid derivatives having a viscosity of below 2,000 cP at ambient temperature, a glyceride based stabilizer, additive(s) and less than 20% oil in breads, rolls, puff pastries, sweet fermented doughs, cakes, crackers, cookies, biscuits, waffles, wafers, tortillas, breakfast cereals, extruded products or coffee whiteners."

"22. A process for producing a water-free low viscous liquid bread improver comprising a liquid emulsifier based on esters of hydroxy polycarboxylic acid derivatives having a viscosity of below 2,000 cP at ambient temperature, a glyceride based stabilizer,

additive(s) and less than 20% oil comprising the steps of: mixing said liquid emulsifier and said stabilizer and heating to 50 to 90°C, optionally adding additives requiring an elevated mixing temperature into the mixture of emulsifier and stabilizer, cooling the obtained mixture to 5 to 35°C and stirring the mixture thoroughly to provide a homogenous mixture, optionally adding and mixing additives requiring a low mixing temperature into said mixture, to provide a low viscous liquid bread improver."

II. Opposition was filed against the granted patent, the opponent requesting revocation of the patent in its entirety on the grounds of lack of novelty and inventive step (Articles 54(2) and 56 EPC and Article 100(a) EPC) and lack of sufficiency of disclosure (Article 100(b) EPC).

III. During the proceedings before the opposition division, the patent proprietor requested that the oppositions be rejected and the patent maintained as granted (main request) or alternatively that the patent be maintained in amended form according to the claims of one of auxiliary requests 1 to 5 (filed with letter of 21 October 2011).

IV. By its decision announced at oral proceedings, the opposition division rejected the opposition under Article 101(2) EPC.

V. The opponent (appellant) lodged an appeal against that decision. With the statement of grounds of appeal, the appellant requested that the decision of the opposition division be set aside and the patent be revoked in its entirety.

VI. In its reply to the statement of grounds of appeal, the patent proprietor (respondent) requested that the appeal be dismissed and that the patent be maintained as granted (main request) or alternatively that the patent be maintained in amended form according to the claims of one of the auxiliary requests that had been submitted during the opposition proceedings. It also submitted two expert declarations: Keller's declaration and Hjorth's declaration, accompanied by Exhibit 1.

VII. With letter dated 1 July 2013, the appellant submitted experimental evidence in support of its arguments. Inadvertently, however, these submissions were not forwarded in a timely fashion to the respondent, nor were they retrievable from the online file until after the parties had been summoned to oral proceedings scheduled for 5 September 2017. Therefore the board acceded to the respondent's request to postpone the oral proceedings.

VIII. A new summons to oral proceedings before the board was issued, scheduling oral proceedings for 3 May 2018.

IX. With letter dated 7 March 2018, the appellant informed the board that it would not attend oral proceedings.

X. With letter dated 23 March 2018, the respondent submitted a sixth auxiliary request and requested that the experimental data filed by the appellant with letter of 1 July 2013 not be admitted into the proceedings.

XI. Oral proceedings before the board took place on 3 May 2018 as scheduled, in the absence of the appellant, as had been announced in writing. During the oral proceedings, the respondent filed a seventh

auxiliary request. At the end of oral proceedings, the chairman announced the board's decision.

The **main request** consists of the claims as granted.

Claim 1 of the **first auxiliary request** differs from claim 1 of the main request in that the liquid emulsifier of item i) is further defined by addition of the following feature from granted claim 8: "said emulsifier comprising diacetyl tartaric esters of mono and diglycerides".

In the **second auxiliary request** claim 2 as granted was deleted but otherwise claim 1 was left unamended and is thus identical to claim 1 as granted.

Claim 1 of the **third auxiliary request** differs from claim 1 of the main request in that the feature "additives" of item iii) is further defined as being "up to 30% additives".

Claim 1 of the **fourth auxiliary request** is identical to claim 1 of the first auxiliary request.

Claim 1 of the **fifth auxiliary request** comprises both amendments introduced into claim 1 of the first and third auxiliary requests.

Claim 1 of the **sixth auxiliary request** differs from claim 1 of the main request in that it contains the following amendments:

"1. A water-free low viscous liquid bread improver comprising

i) 94 to 98% of a liquid emulsifier based on esters of hydroxy polycarboxylic acid derivatives having a viscosity of below 2,000 cP at ambient temperature;
ii) 2 to 6% of a glyceride based stabiliser;
iii) additives, including 0 to 0.1% antioxidant; and
iii [sic]) less than about 20% oil."

Claim 1 of the **seventh auxiliary request** differs from claim 1 of the sixth auxiliary request solely in that the item "iii) less than about 20% oil" has been deleted. Moreover, dependent claims 2 to 4 as granted were deleted and the same amendments as in claim 1 were also introduced into independent claims 15 and 16 (corresponding to claims 21 and 22 as granted), as shown:

"~~21~~15. Use of a water-free low viscous liquid bread improver comprising 94 to 98% of a liquid emulsifier based on esters of hydroxy polycarboxylic acid derivatives having a viscosity of below 2,000 cP at ambient temperature, 2 to 6% of a glyceride based stabilizer, and additive(s) including 0 to 0.1% antioxidant ~~and less than 20% oil~~ in breads, rolls, puff pastries, sweet fermented doughs, cakes, crackers, cookies, biscuits, waffles, wafers, tortillas, breakfast cereals, extruded products or coffee whiteners."

"~~22~~16. A process for producing a water-free low viscous liquid bread improver comprising 94 to 98% of a liquid emulsifier based on esters of hydroxy polycarboxylic acid derivatives having a viscosity of ~~below~~ less than 2,000 cP at ambient temperature, 2 to 6% of a glyceride based stabilizer, and additive(s) including 0 to 0.1% antioxidant ~~and less than 20% oil~~ comprising the steps of: mixing said liquid emulsifier and said stabilizer

and heating to 50 to 90°C, optionally adding additives requiring an elevated mixing temperature into the mixture of emulsifier and stabilizer, cooling the obtained mixture to 5 to 35°C and stirring the mixture thoroughly to provide a homogenous mixture, optionally adding and mixing additives requiring a low mixing temperature into said mixture, to provide a low viscous liquid bread improver."

XII. The documents cited during the proceedings before the opposition division and the board of appeal include the following:

D1 WO 01/70036
D3 WO 99/48377
D9 Experimental report filed by the respondent with letter dated 16 February 2011
E1 Viscosity data for PANODAN VISCO-LO
E3 Viscosity data for PANODAN TR
E4 Declaration by Ms Gammelin and Mr Tørnces
E5 Flowcurve measurements for DATEM emulsifiers
E6 Sedimentation analysis
E7 Viscosity vs tartaric acid content

XIII. The appellant's submissions, in writing, in so far as relevant for the present decision, may be summarised as follows:

Sufficiency of disclosure - main request
The only example of a liquid emulsifier used in the patent was PANODAN VISCO-LO but its viscosity was not specified in the patent. Analytical data provided by the patentee (E5) had been obtained for a recently produced sample of PANODAN VISCO-LO, and so it was questionable that the product had the same characteristics as the earlier product used in the

patent. Availability of the emulsifier at the priority date was also questionable, E4 not constituting sufficient evidence. Moreover there was no disclosure in the patent on how to produce liquid emulsifiers based on esters of hydroxypolycarboxylic acid derivatives having a viscosity below 2 000 cP, and the disclosure of one compound falling within the scope was not enabling for the whole scope of the claim, covering all possible compounds with the given characteristics.

Novelty - main request

Example 12-4 of D3 was novelty-destroying for claim 1 since, as argued by the patent proprietor in letter of 21 October 2011 and demonstrated in E7, the skilled person would know how to modify the viscosity of DATEM emulsifiers just by removing tartaric acid: hence, PANODAN TR inherently contained a liquid DATEM component with a viscosity of less than 2 000 cP.

Inventive step - main request and first to fifth auxiliary requests

The problem was not solved across the full ambit of the claims due to the presence of non-working embodiments. D3, the closest prior art, disclosed liquid bread improvers that were very similar to those provided by the patent: Examples 10 and 11-2; page 33, lines 27 to 28; page 35, lines 7 to 9. The problem should be formulated as the provision of an alternative liquid bread improver. There was no technical effect by replacing soybean oil in D3 by a liquid emulsifier such as PANODAN VISCO-LO, hence it was not inventive. Moreover it was self-evident from D3 to use liquid DATEM emulsifiers as the liquid oil component (Example 12-4).

XIV. The respondent's arguments, in so far as they are relevant for the present decision, may be summarised as follows:

Sufficiency of disclosure - main request
The opponent had not submitted any evidence that the viscosity of PANODAN VISCO-LO had changed from the priority date to the date at which E5 was prepared, and the declaration from Ms Hjorth confirmed that the technical specifications were the same at both dates. E4 also confirmed that PANODAN VISCO-LO was publicly available and had in fact been provided to customers before the priority date (shown in E1). There was also no evidence on file that preparing other emulsifiers would represent an undue burden, being routine for the skilled person in the field of food and emulsifier technology, as confirmed in Keller's declaration.

Novelty - main request
Contrary to opponent's arguments, tartaric acid could not simply be removed from a DATEM emulsifier because it was chemically bonded to the rest of the emulsifier.

Inventive step - main request and first to fifth auxiliary requests
The problem was to provide liquid bread improvers that were improved compared to D3's bread improver of Example 12-4. In Example 12-4 the liquid emulsifier had a viscosity far in excess of 2 000 cP and therefore had by definition a worse pumpability than the improver of the granted claims. Although there was no specific comparative data concerning pumpability, this had never been disputed and was plausible in view of the fact that the PANODAN TR used in D3 had a much higher viscosity than required by the claim: almost twice as high, as shown in E3. E6 provided evidence concerning

stability when using equal amounts (98%) of D3's emulsifier versus the claimed emulsifier. It was surprising that there was no increased sedimentation with the lower-viscosity emulsifier since it was well known that reducing viscosity led to increased sedimentation: i.e. a less viscous composition would be expected to have lower stability. The patent however showed (in Examples 2 to 4) that improvers according to the granted claims had improved pumpability whilst maintaining stability. There would be no motivation to reduce the viscosity of the emulsifier as a means of solving the problem because the skilled person would not expect it to be possible. D1, for instance, taught that it was necessary to add a further stabiliser (abstract; page 2, lines 21 to 23), namely fumed silica stabilising agent, in order to avoid sedimentation: page 4, last paragraph. D1's solution however led to increased volume, which was not desirable. As to the fifth auxiliary request, the emulsifier was more specifically defined and the additives were limited to a maximum of 30%: accordingly those embodiments where pumpability or stability could be compromised due to the presence of too many additives were no longer part of the claim.

Clarity - sixth auxiliary request
The skilled person would readily appreciate that the composition could not have more than 4% oil.

XV. The appellant requested in writing that the decision of the opposition division be set aside and that the patent be revoked in entirety.

The respondent requested that the appeal be dismissed (main request) or, alternatively, that the patent be maintained in amended form on the basis of one of the

sets of claims of the first to fifth auxiliary requests filed with letter dated 21 October 2011, or of the sixth auxiliary request filed with letter dated 23 March 2018, or further alternatively, of the seventh auxiliary request filed during oral proceedings before the board.

Reasons for the Decision

1. The appeal is admissible.

2. The oral proceedings before the board took place in the absence of the appellant, who had been duly summoned but decided not to attend.

The present decision is based on facts and evidence put forward during the written proceedings and on which the appellant has had an opportunity to comment. Therefore the conditions set forth in Enlarged Board of Appeal opinion G 4/92, OJ EPO 1994, 149, are met.

Moreover, as stipulated by Article 15(3) RPBA the board is not obliged to delay any step in the proceedings, including its decision, by reason only of the absence at the oral proceedings of any party duly summoned. In accordance with this provision, the appellant was treated as relying only on its written case.

3. Admission of the experimental data filed by the appellant with letter of 1 July 2013

3.1 According to Article 13(1) RPBA it is at the board's discretion to admit any amendment to a party's case after it has filed its grounds of appeal or reply. This

discretion shall be exercised in view *inter alia* of the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy, taking into account the circumstances of the particular case and the arguments put forward by the parties.

3.2 In response to the respondent's reply to the statement of grounds of appeal, the appellant submitted a further letter, dated 1 July 2013, accompanied by an "Experimental Report". According to the appellant, said experimental data was submitted as a reaction to the respondent's arguments that the objections raised in the appellant's statement of grounds of appeal were not backed up by experimental evidence and that therefore the appellant had not discharged its burden to prove the facts it alleged; said alleged facts related both to sufficiency of disclosure and inventive step and were essentially that the patent did not teach how to achieve the effect over the whole range claimed and that the technical problem had not been solved across the full ambit of the claims.

3.3 The "Experimental Report" describes the testing and provides the results obtained with respect to stability and pumpability of different bread improver compositions which, according to the appellant (letter of 1 July 2013, page 1, fourth paragraph), "meet the compositional requirements of claim 1 of the patent". Based on these results, the appellant concludes that claim 1 of the patent encompasses bread improver compositions that show sedimentation - i.e. are not stable - after two weeks of storage at ambient temperature and that are not pumpable (letter of 1 July 2013, page 1, last paragraph).

3.4 As stated by the appellant, the compositions tested were all made using components according to the claim, as is apparent from Table 1 on the first page of the experimental report. However, varied amounts of emulsifier were used and the end product had different viscosity levels. According to section 5 on the last page of the experimental report, "compositions 2 and 3 were found to have a very high viscosity immediately after preparation" and, in fact, "[b]read improver compositions 2 and 3 were not pumpable". The board notes however that claim 1 not only requires the presence of given components in the composition but also imposes the further restriction that the claimed composition should be a "water-free low viscous liquid bread improver" (claim preamble, emphasis added by the board). Hence, the bread improvers of compositions 2 and 3 of the experimental report are excluded from the scope of claim 1 because they have a very high viscosity. Accordingly, this experimental data is not suitable to support the appellant's allegations that the problem is not solved over the whole scope of the claim or that there is no teaching in the patent as to how to achieve the technical effect across the whole range claimed.

3.5 For these reasons, the board decided not to admit the late-filed experimental data into the proceedings (Article 13(1) RPBA).

4. Main request

4.1 Sufficiency of disclosure

4.1.1 Article 83 EPC requires that the European patent application shall disclose the invention in a manner sufficiently clear and complete for it to be carried

out by a person skilled in the art. In the case of a granted patent, opposition may be filed on the grounds that the European patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC). In the present case, the appellant objected that the claimed invention was not sufficiently disclosed in the patent because there was no teaching on how to obtain an emulsifier with the characteristics as claimed nor was there evidence that such an emulsifier was already available in the prior art.

4.1.2 While it is true that the patent does not teach how to obtain an emulsifier with the low viscosity as claimed, it does provide examples making use of one such emulsifier, designated PANODAN VISCO-LO. Said emulsifier was shown to have a viscosity below 2 000 cP at ambient temperature (20 to 25°C: D9) and to have been publicly available before the priority date (E1, E4). Hence the board is satisfied that the skilled person would have no undue burden in carrying out the invention as claimed.

4.1.3 The appellant essentially argued that it had not been proved that PANODAN VISCO-LO was publicly available before the priority date and, even if it was, whether it had the required viscosity, since the viscosity data given in D9 had been obtained with a PANODAN VISCO-LO composition which was produced after the priority date of the patent. Moreover the appellant argued that the availability of one such product would not be enabling for all possible products falling within the claimed scope.

4.1.4 There is evidence on file, in the form of a sales data sheet (E1) and a declaration by two employees of the producer company Danisco (E4), confirming that PANODAN VISCO-LO was available before the priority date. With the letter of reply to the grounds of appeal, the respondent submitted a further declaration by Ms Hjorth, an employee of the patentee, stating that "from before the priority date of EP 1 443 823 [the patent] to the present day, the technical specifications of the PANODAN® VISCO-LO have remained the same to the extent that it has always had a viscosity of less than 2,000 cP at ambient temperature" (paragraph 5); the declaration is accompanied by an exhibit (entitled Exhibit 1) that is, according to the declaration (paragraph 9), "the electronic record kept by the patentee for the past 10 years" and lists the measured viscosity values for different PANODAN VISCO-LO batches, showing that it is "consistently below 2,000 cP". In the absence of any evidence to the contrary, the board is thus convinced that an emulsifier with the characteristics required by claim 1 was indeed available at the priority date.

4.1.5 As to the argument that there is no teaching on how to produce other emulsifiers with the same viscosity, the board notes that again the appellant has not provided any evidence to support the arguments that the skilled person would not be able to produce such an emulsifier. As argued by the respondent, the skilled person would know what factors affect the viscosity of emulsifiers and would be able to routinely modify them in order to obtain an emulsifier with the desired viscosity: this is confirmed in paragraphs 4 to 6 of the declaration submitted by the respondent with the reply to the statement of grounds of appeal (declaration by Mr Keller, an inventor of the present patent).

4.1.6 The ground for opposition under Article 100(b) EPC therefore does not prejudice the maintenance of the patent as granted.

4.2 Novelty

4.2.1 Document D3 discloses compositions, including bread improvers, with a number of different emulsifiers; D3 however does not provide any indication as to the viscosity of the emulsifiers used. Example 12-4 discloses a composition with components corresponding to those of claim 1 but uses the emulsifier PANODAN TR, which, as has been shown in E3 and was not disputed by the appellant, has a viscosity well above 2 000 cP. Accordingly, document D3 does not disclose any bread improver composition comprising an emulsifier with a viscosity below 2 000 cP and is therefore not novelty-destroying for the subject-matter of claim 1.

4.2.2 The board disagrees with the appellant's arguments that Example 12-4 is novelty-destroying because PANODAN TR, being a DATEM emulsifier (DATEM=diacetyl tartaric acid esters of mono- and diglycerides), inherently contained a liquid component with a viscosity of less than 2 000 cP: according to the appellant (statement of grounds of appeal, sixth paragraph of page 6), removal of a small amount of tartaric acid would produce a liquid DATEM with a viscosity of less than 2 000 cP, as had been shown in E7. The board however notes that, while different components of PANODAN TR might exhibit such viscosity, the fact is that the emulsifier used in Example 12-4 is PANODAN TR with all its different components and the resulting viscosity. That the skilled person would know how to modulate the viscosity of a DATEM emulsifier by altering its tartaric acid

content, *inter alia*, does not mean however that all possible resulting viscosity values are to be considered as implicitly disclosed.

4.2.3 The ground for opposition of lack of novelty pursuant to Articles 100(a) and 54 EPC does not therefore prejudice the maintenance of the patent as granted.

4.3 Inventive step

4.3.1 The patent aims at providing water-free liquid bread improvers with low viscosity and with little, i.e. less than 20%, or no oil (paragraphs [0001] and [0015]). As discussed in paragraph [0003], "[l]iquid bread improvers are often preferred nowadays because they are easy to handle and mix with other ingredients"; however "[l]iquid bread improvers made with current technology are made by mixing emulsifiers with large amount of oils to decrease the viscosity of the emulsifiers in order to allow the improvers to be fluid enough to be pumped". According to paragraph [0010], "[i]t has not been possible to produce liquid bread improvers containing liquid emulsifiers with such a low amount of oil and no water and still having a low enough viscosity to be pumped". Paragraph [0011] then lists the disadvantages of liquid bread improvers with large amounts of oil, which make them unsuitable for some recipes such as for baking bread, for example. By using a liquid emulsifier with low viscosity at ambient temperature, the inventors were able to prepare a "water-free low viscous liquid bread improver containing liquid emulsifier containing less than 20% oil in a process, which is simple and technically advantageous", and which "is capable of sustaining a stable and low viscous dispersion with up to 30% solid additives" (paragraph [0013]).

4.3.2 Document D3, which also discloses liquid bread improvers, can be considered the closest prior art. Claim 1 of D3 is directed to compositions comprising (a) an oil and/or an oil mimetic component, (b) a triglyceride fatty acid and/or a high melting point emulsifier component, and (c) a particulate component; claim 20 is directed to bread improvers comprising such a composition. The description contains a number of examples corresponding to the claimed compositions. Example 12.4 in particular (table XVI on page 37) discloses a liquid suspension containing 98% PANODAN TR as component (a), corresponding to a liquid emulsifier of present claim 1, item i); 1% hardened rapeseed oil as component (b), corresponding to a glyceride based stabiliser of present claim 1, item ii); and 2% enzyme as component (c), corresponding to an additive of present claim 1, item iii). The difference of this specific composition to present claim 1 is that it uses an emulsifier which, according to E3, has a viscosity above 2 000 cP (see above, section 4.2.1). There is no comparative data either in the patent or elsewhere on file supporting the conclusion that there is any technical effect associated with this distinguishing feature. Hence the technical problem has to be formulated as the provision of an alternative water-free liquid bread improver and the board is satisfied that the claimed composition solves the problem.

4.3.3 It next has to be examined whether the skilled person would arrive at the claimed composition in an obvious way.

4.3.4 When looking for alternatives to the water-free liquid bread improver of D3, the skilled person would consider replacing the emulsifier used in D3 by any other

available emulsifiers. One such emulsifier would be PANODAN VISCO-LO, which has a viscosity below 2 000 cP (see above, section 4.1.2). Accordingly, the skilled person would arrive at the claimed composition without the need for inventive skill.

4.3.5 The respondent essentially argued that the technical problem was to provide liquid bread improvers with improved pumpability and maintained stability. The board however notes that there is no data to support the assertion that all bread improvers falling within the scope of the claim have better pumpability than, and the same stability as, the bread improver disclosed in Example 12-4 of D3. In fact, D3 explicitly states that the products of Example 12 "were all liquid and pumpable, and the enzyme was homogenous[ly] distributed in the product after 2 weeks storage at 20°C" (page 38, lines 1 and 2), and the whole disclosure of D3 is directed at providing stable suspensions of particulate components (see e.g. Title). Without questioning respondent's argument that better pumpability would be expected for an emulsifier with lower viscosity (as claimed) versus an emulsifier with higher viscosity (as in D3), the board notes that the claimed bread improver does not comprise solely a low-viscosity emulsifier but also other components, of which solely three of them are very broadly defined in the claim: depending on these and any other possible components and on the relative amounts of all components, very different pumpabilities (and stabilities) can be obtained.

4.3.6 The subject-matter of claim 1 is thus considered to lack an inventive step, and the main request is not allowable. The ground for opposition of lack of inventive step pursuant to Articles 100(a) and 56 EPC

therefore prejudices the maintenance of the patent as granted.

5. First auxiliary request - inventive step

Claim 1 of this request differs from claim 1 of the main request merely in that the emulsifier is further defined as comprising diacetyl tartaric esters of mono and diglycerides. Such emulsifiers were well known in the prior art and the skilled person would know how to routinely change their composition in order to modulate their viscosity, as discussed above (section 4.2.2). Moreover, the PANODAN VISCO-LO emulsifier used in the patent's examples and publicly available before the priority date is also such an emulsifier: E5 and patent proprietor's letter of 21 October 2011 (page 2, last paragraph, to page 3, first paragraph). Hence, for the same reasons as discussed above for the main request, the subject-matter of this claim still lacks inventive step pursuant to Article 56 EPC.

6. Second auxiliary request - inventive step

Claim 1 of this request is identical to claim 1 of the main request. Accordingly its subject-matter also lacks inventive step pursuant to Article 56 EPC.

7. Third auxiliary request - inventive step

Claim 1 of this request differs from claim 1 of the main request merely in that the amount of additives of item iii) is further defined as being up to 30%. The claim however still encompasses many other possible components, including such that are only broadly defined, and therefore it is still not possible to conclude that all compositions falling within the claim

scope would have better pumpability and maintained stability in relation to the composition of D3. The technical problem is thus still the provision of an alternative, and the claimed composition is, for the same reasons as for the main request, considered obvious. Hence, the subject-matter of this claim also lacks inventive step.

8. Fourth auxiliary request - inventive step

Claim 1 of this request is identical to claim 1 of the first auxiliary request. Accordingly its subject-matter also lacks inventive step.

9. Fifth auxiliary request - inventive step

Claim 1 of this request differs from claim 1 of the main request in that the emulsifier is further defined as comprising diacetyl tartaric esters of mono and diglycerides (as in the first auxiliary request) and in that the amount of additives of item iii) is further defined as being up to 30% (as in the third auxiliary request). Hence, for the same reasons as discussed above for the first and third auxiliary requests, the subject-matter of this claim also lacks inventive step.

10. Sixth auxiliary request - clarity

10.1 According to Article 84 EPC, the claims shall define the matter for which protection is sought and shall be clear and concise and supported by the description. In opposition proceedings (and also in opposition appeal proceedings), objections under Article 84 EPC may not be raised against granted claims but they may be raised against amended claims if the non-compliance with Article 84 EPC arises from the amendments, as was

confirmed by the Enlarged Board of Appeal in decision G 3/14 (OJ EPO 2015, A102).

10.2 Claim 1 of the sixth auxiliary request has been amended by insertion of ranges of percentage amounts to the components of items i), ii) and iii) of the claimed composition. Hence the composition according to claim 1 comprises 94 to 98% of a liquid emulsifier; 2 to 6% of a glyceride stabiliser; additives, including 0 to 0.1% antioxidant; and less than about 20% oil. It is immediately apparent that, when taking each of the lower limits of the percentage range given for items i) and ii) (94% and 2%, respectively), only 4% remains available for other components: it follows that the oil component cannot be up to 20% but up to 4% at most. The claim is thus unclear because it comprises amount ranges that are incongruent. Moreover, although the component "less than 20% oil" was indeed already part of granted claim 1, the lack of clarity was not present in the granted claim - wherein the other components had no defined amount ranges - but was only a result of the introduced amendments, taken from the description, defining such amount ranges. Thus, Article 84 EPC is open for discussion in the light of Enlarged Board decision G 3/14 (*supra*).

10.3 The respondent essentially argued that there was no lack of clarity because the skilled person would immediately understand that the amount of oil present would have to be adapted to the amounts of the other components. The board however disagrees with this argumentation and notes that the skilled person might also consider that the other amounts have to be adapted instead, meaning that the claim is in fact ambiguous. Moreover, independently of how a skilled person might

interpret an unclear claim, the EPC requires that a claim complies with Article 84 EPC.

10.4 The same objection applies to dependent claims 2 and 3, which further define the oil amount as being less than 15% and 10%, respectively.

11. Seventh auxiliary request

11.1 Clarity

The feature "less than about 20% oil" was deleted from claim 1, and previous claims 2 and 3 were cancelled. Accordingly, the objection for lack of clarity pursuant to Article 84 EPC raised against the previous request was overcome.

11.2 Amendments

11.2.1 The amendments introduced in claims 1, 15 and 16 find their basis in the application as filed on page 8, fourth paragraph. Moreover, the combination with the further features of the dependent claims and of claims 15 and 16 also finds a basis in the general part of the description of the application as filed. Hence the requirements of Article 123(2) EPC are fulfilled.

11.2.2 As to Article 123(3) EPC, the scope of the present claims is narrower than that of the granted claims, since the composition is now defined by amount ranges for each component. The fact that the feature "less than 20% oil" is no longer present in the claims does not extend the scope of protection conferred by the patent: granted claim 1 did not require the presence of oil in the composition but rather just limited any oil present to less than 20% of the composition. In fact,

it is apparent both from granted claim 2 and from different passages of the patent's description that compositions without any oil were also encompassed: granted claim 2 as well as paragraph [0018] of the patent refer to "0 to 20% oil". The present claim does not refer to oil at all, meaning that it encompasses compositions with no oil or with at most 4% oil, which is the percentage that is left available for other possible components. Hence the limitation of the granted claims that the oil component should not exceed 20% is still implicitly present in claim 1 of the seventh auxiliary request. The requirements of Article 123(3) EPC are thus complied with.

11.3 Sufficiency of disclosure

For the same reasons as discussed above in relation to the main request, the claims of the seventh auxiliary request also relate to subject-matter that is sufficiently disclosed in the application as filed.

11.4 Inventive step

11.4.1 In view of the amount ranges specified for each of the components of the claimed bread improver, the board is convinced that all compositions falling within claim 1 of the seventh auxiliary request indeed have better pumpability than the compositions according to Example 12-4 of D3. This is because it is plausible that compositions comprising between 94% and 98% of a liquid emulsifier with a viscosity below 2 000 cP have better pumpability than those comprising 98% of the liquid emulsifier PANODAN TR, which has a viscosity twice as high: it is unlikely that other components of the claimed composition, which are present up to a maximum of 4% of the composition, would increase the

viscosity of the final composition so drastically as to render it equal or superior to that of D3's composition. On the other hand, the board is also satisfied that the stability of the bread improver, in terms of lack of sedimentation of additives, is also given: this has been stated in the patent (e.g. paragraph [0013]) and has been confirmed in the post-experimental data submitted in E6, wherein compositions comprising 98% of either PANODAN VISCO-LO or PANODAN TR were tested. The technical problem is thus formulated as the provision of an improved bread improver, i.e. a bread improver with better pumpability but maintained stability in comparison to the bread improver of the closest prior art D3. The solution is the bread improver as claimed and the board is satisfied that the solution plausibly solves the technical problem.

11.4.2 As to the obviousness of the solution, the board notes that the skilled person, when seeking to improve pumpability of bread improvers while maintaining their stability, would not have expected it to be possible simply by using emulsifiers with a lower viscosity because he would fear a consequent lack of stability, as discussed in D1 (page 2, lines 10 to 12). While D1 teaches to add stabilisers such as fumed silica (page 2, lines 21 to 23, and page 4, last paragraph), the composition as claimed is as stable as identical compositions with higher viscosity, without the need for adding stabilisers. Hence the board comes to the conclusion that the claimed solution is not obvious.

11.4.3 Claim 1 of the seventh auxiliary request is thus considered to involve an inventive step pursuant to Article 56 EPC. The same is also true for dependent claims 2 to 14. Similarly, independent claims 15 and 16, while relating to known uses and processes, e.g.

the use of a bread emulsifier defined as in claim 1 in the bakery products and other products as listed (claim 15) or a process for producing a bread improver with the composition as defined in claim 1 (claim 16), are also inventive because they rely on the use of the inventive product of claim 1. The same applies to dependent claim 17.

Order

For these reasons it is decided that:

1. The appeal is dismissed.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of claims 1 to 17 of the seventh auxiliary request filed at the oral proceedings before the board, and a description to be adapted thereto.

The Registrar: The Chairman:

M. Schalow A. Lindner

Decision electronically authenticated