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D E C I S I O N
of 18 July 1997

Case Number: T 0582/94 - 3.3.4

Application Number: 90201123.8

Publication Number: 0398411

IPC: A23D 7/00

Language of the proceedings: EN

Title of invention:
Water-in-oil dispersion and process for preparing such dispersion

Patentee:
UNILEVER N.V., et al

Opponent:
N.V. Vandemoortele International
Koninklijke Brinkers Margarinefabrieken B.V.

Headword:
W/O-Dispersion/UNILEVER

Relevant legal provisions:
EPC Art. 123(2), (3), 54, 56

Keyword:
"Main request and first to fourth auxiliary requests - claim 9 - novelty (no)"
"Fifth auxiliary request - claim 9 - inventive step (no)"
"Sixth auxiliary request - claims 1 to 8 - novelty (yes), inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0582/94 - 3.3.4

D E C I S I O N
of the Technical Board of Appeal 3.3.4
of 18 July 1997

Appellants: (Proprietors of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 30 May 1994 revoking European patent No. 0 398 411 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: L. Galligani
Members: R. E. Gramaglia
S. C. Perryman

Summary of Facts and Submissions

I. European patent No. 0 398 411 based on application No. 90 201 123.8 claiming priorities from EP 89201209 of 16 May 1989 and EP 90200386 of 19 February 1990 was granted on the basis of claims 1 to 12, of which independent claims 1 and 9 read as follows:

"1. Process for preparing a dispersion comprising a continuous fat phase and a dispersed gelled aqueous phase, wherein a water-continuous composition, containing at least 1% gelatin by weight of water, is cooled from above the gel setting temperature of the water-continuous composition to below said gel setting temperature and subjected to such conditions of shear that the water-continuous composition is converted into small gelled aqueous beads, after which a fat-continuous dispersion is formed while maintaining the temperature at below the gel melting temperature."

"9. Dispersion comprising less than 23% by weight of a continuous fat phase and a dispersed gelled aqueous phase containing gelatin at a concentration of 1.0 to 7.5 times its critical concentration and optionally a combination of one or more gelling agents other than gelatin with the proviso that if gelling agents other than gelatin are present their concentration is below their critical concentration."

II. Two oppositions were filed on the grounds of Articles 100(a) and 100(b) EPC, i.e., lack of novelty, lack of inventive step and insufficiency of disclosure. On 30 May 1994 the Opposition Division issued a reasoned decision whereby the European Patent was revoked pursuant to Article 102(1) EPC. The Opposition Division came to the conclusion that, while the opposed patent satisfied the requirements of Article 83 EPC,

product claim 9 of all the requests on file which was directed to a W/O (water-in-oil) dispersion lacked novelty over document (1).

The following documents are referred to in the present decision:

(1) EP-A-0 237 120

(7) Letter from Van den Berg Foods to Koninklijke Brinkers Margarinefabrieken B.V. dated 3 December 1991

(13) Test Report dated 22 March 1994 from Unilever Research Colworth House

(15) Letter from AVEBE to Koninklijke Brinkers Margarinefabrieken B.V. dated 7 March 1995.

III. The Appellants (Patentees) lodged an appeal against this decision. The Statement of Grounds of Appeal was accompanied by new claims in the form of a main request with a new set of claims and first to sixth auxiliary requests relating to new set of claims in replacement of all previous requests. The Respondents (Opponents) filed counterarguments.

IV. By a communication accompanying the summons to oral proceedings, the Appellants were informed of the preliminary opinion of the Board. The Parties were asked to state whether they would wish the Board to consider the question of inventive step and they agreed.

V. During oral proceedings held on 23 February 1996, the Appellants submitted a new main request and new auxiliary requests first to sixth in replacement of all previous requests. Claim 1 of all requests is identical

and corresponds to granted claim 1. Claim 9 is different in all requests (amendments in respect of granted claim 9 are shown), with the exception of the sixth auxiliary request (claims 1 to 8) which comprises no product claims.

Claim 9 of the **main request** reads as follows:

"9. Dispersion comprising less than 23% by weight of a continuous fat phase and a dispersed gelled aqueous phase containing gelatin at a concentration of 1.0 to 7.5 times its critical concentration and optionally ~~a combination of~~ one or more gelling agents other than gelatin with the proviso that if gelling agents other than gelatin are present their concentration is below their critical concentration."

Claim 9 of the **first auxiliary request** reads as follows:

"9. Dispersion comprising less than 23% by weight of a continuous fat phase and a dispersed gelled aqueous phase containing gelatin at a concentration of 1.0 to 7.5 times its critical concentration and ~~optionally a combination of~~ one or more gelling agents other than gelatin which gelling agent(s) is/are present below their critical concentration."

Claim 9 of the **second auxiliary request** reads as follows:

"9. Dispersion comprising less than 23% by weight of a continuous fat phase and a dispersed gelled aqueous phase containing gelatin at a concentration of 1.0 to 7.5 times its critical concentration and ~~optionally a combination of~~ one or more gelling agents other than gelatin which gelling agent(s) is/are present below

their critical concentration, **said dispersion being obtainable by the process of claim 1.**"

Claim 9 of the **third auxiliary request** reads as follows:

"9. Dispersion comprising less than 23% by weight of a continuous fat phase and a dispersed gelled aqueous phase containing gelatin at a concentration of 1.0 to 7.5 times its critical concentration and ~~optionally a combination of~~ one or more gelling agents **of the group comprising native starch, hydrolysed starch and starch derivatives** which is/are present below their critical concentration."

Claim 9 of the **fourth auxiliary request** reads as follows:

"9. Dispersion comprising less than 23% by weight of a continuous fat phase and a dispersed gelled aqueous phase containing gelatin at a concentration of 1.0 to 7.5 times its critical concentration, ~~and optionally a combination of~~ one or more gelling agents other than gelatin which gelling agent(s) is/are present below their critical concentration **and at least 0.02 wt.% of a O/W-promoter selected from the group consisting of protein, citric acid esters of monoglycerides, diacetyltartaric acid esters of monoglycerides, polyoxyethylene sorbitan esters of fatty acids, sucrose esters of fatty acids, stearoyl lactylates, sorbitan esters of fatty acids, lecithin and mixtures thereof.**"

Claim 9 of the **fifth auxiliary request** reads as follows:

"9. Dispersion comprising less than 23% by weight of a continuous fat phase and a dispersed gelled aqueous phase containing gelatin at a concentration of 1.0 to 7.5 times its critical concentration, ~~and optionally a combination of~~ one or more gelling agents other than gelatin which gelling agents is/are present below their critical concentration **and at least 0.02 wt.% of citric acid esters of monoglycerides or diacetyltartaric acid esters of monoglycerides as an O/W-promoter.**"

Claims 2 to 8 of all requests related to specific embodiments of the process of claim 1. Claims 10 to 11 (or 12) of all requests except the sixth auxiliary request related to specific embodiments of the dispersion of claim 9.

At the conclusion of the oral proceedings the decision of the Board was reserved.

VI. In support of their requests the Appellants submitted substantially the following arguments:

The process of claim 1 was novel over the one disclosed by Example 9 of document (1) because in this example the gelation of the aqueous phase started only after 600 seconds whereas phase inversion took place already after 400 seconds.

As regards the inventive step, the process of claim 1 comprised the critical step of cooling before phase inversion, a feature not suggested by the prior art. Some prior art documents related to processes that involved a cooling step. However they suggested neither a cooling step occurring just before phase inversion, nor the advantages which could follow by doing so. The claimed process enabled the preparation of dispersions of very low fat content, even when using aqueous phase

compositions which in the ungelled state did not possess a high viscosity. For dispersions comprising less than 23 wt.% fat, a continuous fat phase could not form at all when the aqueous phase comprised only gelatin or gelatin as a main component. This was due to the fact that gelatin gelled very slowly. The test report of document (13) showed this.

The Appellants disputed the Opposition Division's reasoning that had led to rejection of claim 9 for lack of novelty. In order to deny the novelty of claim 9 the Opposition Division had concluded that the passage on page 4, lines 30 to 36 of document (1) relating to the concentrations of gelling agent to be included in the aqueous phase, namely from 3 to 10 wt.% for the hydrolysed starch derivative and from 0.5 to 5 wt.% for the gelatin, provided the unambiguous teaching of an aqueous phase comprising 3 wt.% maltodextrin and 5 wt.% gelatin. In the Opposition Division's view, such an aqueous phase with gelatin above its critical concentration and maltodextrin below its critical concentration met the requirements of claim 9 requiring the presence of gelatin at a concentration of 1.0 to 7.5 times its critical concentration and optionally one or more gelling agent(s) other than gelatin at a concentration below their critical concentration.

However, the Appellants emphasized that the range 3 to 10 wt.% did not relate to maltodextrin but to the gelling hydrolysed starch derivative. As shown in a test report accompanying the Statement of Grounds of Appeal, the lower figure of 3 wt.% corresponded to a hydrolysed starch derivative having its critical concentration at 3 wt.%. Example 9 of document (1) could not be novelty destroying for the dispersion of claim 9 of the main request because document (1) was not enabling for dispersions containing less than 23 wt.% fat and with gelatin alone as the gelling

agent. Moreover, in the instance the aqueous phase composition of document (1) comprised more than one gelling agents, these should occur at a concentration at or above their critical concentration. There was in fact a sentence on page 3, lines 41 to 42 of document (1) reciting that the composition must contain one or more gelling agents in a concentration **at or above the critical concentration**. The only example of document (1) illustrating the use of two gelling agents, namely Example 1, indeed showed that the two gelling agents (Paselli SA2 maltodextrin at 14.5 wt.% and gelatin 270 bloom at 2.0 wt.%) were above their critical concentration.

VII. The Respondents submitted substantially the following arguments:

Concerning the novelty of the process of claim 1, lines 47-49 of the patent in suit stated that it was not necessary that the gelation process be completed before the fat-continuous dispersion is formed but rather that the cross-linking mechanism leading to gelation should start to occur before said fat-continuous dispersion forms. Example 9 of document (1) disclosed the preparation of a water-in-oil emulsion by passing a mixture of an aqueous phase comprising 5 wt.% gelatin with a fat phase through two A-units and a Euromatic® to achieve gelation and inversion. The first A-unit was cooled to 7°C, i.e., below the gel setting temperature of gelatin. Thus, in the process disclosed by Example 9 of document (1), the aqueous phase comprising gelatin in an amount higher than its critical concentration would of necessity start its cross-linking mechanism leading to gelation as soon as it is cooled to below the gel setting temperature. Therefore the beginning of gelation occurred before phase inversion. That the gelation of the aqueous phase

could not start after 600 seconds after phase inversion taking place after 400 seconds was also shown by Example 6 of the patent in suit, wherein it took only 210 seconds to a 3.2 wt.% gelatin dispersion to gel. A 5 wt.% gelatin solution as in Example 9 of document (1) would of necessity gel in a shorter time, i.e., before the 400 seconds needed for phase inversion to occur. In view of this, claim 1 lacked novelty over Example 9 of document (1).

Against the inventive step of claim 1, only Respondent I provided the argument that the claimed process was obvious over document (1) because both document (1) and the contested patent related to the same field and were concerned with overcoming the same technical problem. Moreover all the characterizing features of the process of claim 1 were already disclosed by document (1).

The dispersion of claim 9 was not novel because document (1) provided an unambiguous teaching of a combination of 3 to 20 wt.% maltodextrin and 0.5 to 5.0 wt.% gelatin. Document (1) did not exclude that if one or more gelling agent(s) other than gelatin was/were present in the aqueous phase, these could occur at a concentration below their critical concentration.

Respondent II denied the Appellants' argument that document (1) was not enabling for dispersions comprising less than 23 wt.% fat and with gelatin as the sole gelling agent in the aqueous phase, by making reference to document (7) which showed that a dispersion comprising 20 wt.% fat with gelatin as the sole gelling agent in the aqueous phase, was feasible in the light of document (1) and was also on the market.

VIII. The Appellants requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or on the basis of one of the first to sixth auxiliary requests as filed at the oral proceedings on 23 February 1996.

The Respondents requested that the appeal be dismissed.

Reasons for the Decision

Process claims of all requests

Articles 123(2) and (3) EPC

1. Process claims 1 to 8 are the same for all requests and identical to the granted claims. No objection under Article 100(c) EPC was raised in the oppositions. Thus no issues under Articles 123(2) and (3) EPC arise for consideration.

Novelty of claim 1 (Article 54 EPC)

2. The Respondents point out that the description (page 3, line 20 and lines 47-49) suggests that, before phase inversion takes place, it is crucial that the cross-linking mechanism leading to gelation **starts** to occur, not that the gelation process be complete. Since there is no indication in claim 1 of the extent of gelation of the aqueous phase, in their view it is not possible to distinguish the claimed process from that disclosed by Example 9 of document (1). This describes the preparation of a water-in-oil emulsion by passing a mixture of an aqueous phase comprising 5 wt.% gelatin with a fat phase through two A-units and a Euromatic® to achieve gelation and inversion. The first A-unit is

cooled to 7°C, i.e., below the gel setting temperature of gelatin.

In the Board's view, however, a distinction can be made between the claimed process and that of Example 9 of document (1) since in the latter process, the dispersed aqueous phase has not yet developed a gel structure (see page 3, line 7 of the patent in suit) soon after o/w → w/o inversion. The Respondents have not been able to demonstrate that the aqueous phase involved in the process of document (1) exhibited some gel structure before phase inversion. The Appellants' expert clearly stated before the Opposition Division that in the process of Example 9 of document (1) gelation started to occur after 600 sec, while phase inversion occurred after only 400 sec. Therefore it must be concluded that before 600 sec and after phase inversion, there was no gel structure at all. The Respondents were not able to contest the figures provided by the Appellants' expert in relation to the residence time in the two A-units and the Euromatic® (400 sec) and to the start of gelation (600 sec). The burden of proof is on the Respondents as Opponents to provide evidence as to what will inevitably happen when the teaching of document (1) is followed, and they have not discharged this burden of proof. Where the issue is obviousness, the Board must necessarily speculate as to what the skilled person would have done, but where, as here, the issue is what is implicit from the teaching, repetition of the example would be appropriate. The manner of repetition might be criticised, but at least there would be some evidence as to what happened. There are no instructions in the patent in suit as to how to verify when phase inversion occurred relative to gelation. An attempt at experimental reworking might produce the incidental bonus that if Opponents discovered that it was impossible to tell whether following the prior art example meant working within

the area of the claim, they would have evidence to support their case under Article 83 EPC.

3. The Board observes that either a water phase exhibits a gel structure or it does not (see eg., document (1), last 2 lines of page 6 and page 9, line 15). This view appears to be supported by document (15), as an expert's opinion, where reference is made to a test for establishing whether a solution has turned into a gel. This test is that "no visible flow on turning the beaker" should be observed. This suggests that the skilled person knows exactly when something can be termed a gel and when it cannot. If a composition is a gel, then depending on the extent of cross-linking the gel may exhibit a very weak to very strong gel structure which correlates with a low or higher "gel strength" as measured by the "shear storage modulus" (see page 4 of the patent in suit).

4. The Respondents' argument that the gel strength parameters of claim 4 need to be incorporated into the main claim for distinguishing purposes, cannot be followed by the Board, because the Respondents have not been able to demonstrate that the water phase of the process of document (1) involves some gel structure **before** phase inversion occurs.

5. The Respondents further argue that it does not make sense at all that an aqueous phase comprising 5 wt.% gelatin as in Example 9 of document (1) would not be gelled to some extent before entering the Euromatic® (i.e., within 400 seconds), while an aqueous phase comprising only 4 wt.% gelatin would be gelled before entering the last C-unit, i.e. after 210 seconds, according to Example 6 of the contested patent.

Yet the Board observes that this contradiction is only apparent, once it is borne in mind that in Example 6 of the contested patent, the 4 wt.% gelatin is not used alone as in Example 9 of document (1), but rather it is used together with 2 wt.% Remyrise®, which is a hydrolysed starch derivative. According to a preferred embodiment of the patent in suit (see last paragraph of page 3), the addition of low concentrations (below the critical one) of starch derivatives modify the kinetics of gelation by exerting the beneficial effect of increasing the gelation rate of gelatin. This technical effect is shown by Fig. 1 of the patent, wherein an increased rate of gelation for a mixture of gelatin plus Remyrise® (curve B) over gelatin alone (curve A) emerges. Therefore it is not surprising that the aqueous phase of Example 6 of the patent in suit is able to gel after only 210 sec, while the aqueous phase of Example 9 of document (1), comprising no gelling accelerator, begins to gel only after 600 sec.

The above view is confirmed by Examples 1 to 5 of the patent in suit all dealing with gelatin alone in which gelation always occurs after about 5 minutes, while in Examples 6 to 8 (for Examples 9 to 12 no residence times are reported) wherein a starch derivative is added, gelation starts after about 210 sec only. Therefore the apparent contradiction emphasized by the Respondents does not alter the Board's view that in the process for preparing a dispersion of Example 9 of document (1) gelation occurs **after** phase inversion while in the process according to the patent in suit it takes place **before** it (see claim 1 and examples), and thus the novelty of the process of claim 1 has to be acknowledged.

6. Since all the special embodiments of dependent claims 2 to 8 also rely on this novel feature, their novelty has likewise to be acknowledged.

Inventive step of claim 1 (Article 56 EPC)

Closest prior art and problem to be solved

7. All the Parties agreed, and the Board agrees as well, that the closest prior art underlying the process of claim 1 is represented by document (1), in particular by the process disclosed in Example 9 in which a dispersion comprising about 25% by weight of a continuous fat phase and about 75% by weight of a dispersed gelled aqueous phase containing 5% by weight gelatin calculated on the aqueous phase composition, is prepared. This process is characterized by continuously mixing at 70°C the fat phase composition with a gel-forming aqueous phase having a high viscosity (32 mPa.s at a shear rate of 17090 sec^{-1} and a temperature of 5°C) and passing the mixture through a series of two A-units operating at 7°C and 20°C, respectively, and a high shear mixer.

In the light of document (1) the problem to be solved is the provision of an alternative process for preparing a low-fat dispersion. The solution proposed in claim 1 is a method which involves a cooling step just before phase inversion. During this cooling step, the gelling aqueous phase is converted into small gelled beads. In the light of the examples of the patent in suit, the Board is satisfied that the process of claim 1 solves the above problem, as it allows the preparation of dispersions comprising less than 23 wt.% fat comprising gelatin as the only gelling agent.

It is necessary to decide whether the skilled person would have arrived at the claimed process without applying inventive skill. The Board is of the opinion that, while modifying the process of Example 9 of document (1) in such a way that the gelation of the aqueous phase starts to occur before phase inversion, wherein the gelling aqueous phase is converted into small gelled beads, could *prima facie* appear as a simple modification of the process of Example 9 of document (1), the skilled person could not effect this modification without knowledge of the technical grounds for doing this. First, there was the need to elucidate the reasons for which the process of document (1) failed when used to make dispersions comprising less than 23 wt.% fat wherein the aqueous phase composition comprised only gelatin (see in this respect document (13)). Among all the possible reasons for failure the Appellants pointed towards the complex kinetics of gelation of gelatin, and the Board already sees an inventive contribution in selecting to concentrate on this. As confirmed by the statements made by the Appellants' expert before the Opposition Division, the critical point was the realisation by the present inventors that the triple helix chain in gelling gelatin should form before phase inversion occurs and that thus a cooling step with small gel beads formation should be introduced as a measure before dispersion in the fat phase. In the Board's view this technical teaching underlying the process of claim 1 of the patent in suit is not suggested by the prior art.

In conclusion the skilled person would not have arrived at the process of claim 1 in an obvious way and thus the claim fulfils the requirements of Article 56 EPC.

Dependent claims 2 to 8, all relying on the same inventive feature of the main claim, also satisfy Article 56 EPC. This conclusion concerning the process claims applies to all requests.

Product claims of the main request

Articles 123(2) and (3) EPC

8. The product claims 9 to 12 of the main request contain the claims as granted with some minor amendments. In claim 9 the expression "a combination of" has been removed and in claim 12, "tartic" and polyorycethylene" have been amended to read "tartaric" and "polyoxyethylene". These amendments are semantic in nature and have no effect either on the contents of the patent specification in comparison with the application as filed or on the extent of the protection conferred in comparison with the claims as granted. Thus no objection under Article 123(2) and (3) arises.

Novelty of claim 9 (Article 54 EPC)

The ranges of gelling agents present in the aqueous phase of the dispersion of document (1)

9. Document (1) relates to water-in oil dispersions having a continuous fat phase (less than 35 wt.%, eg., 17 to 25 wt.%, see claim 18) and a dispersed aqueous phase. The latter is a gel forming composition containing one or more gelling agents. Document (1) discloses on page 4, lines 23 to 28 and 31 to 36 the concentration ranges of gelling agent(s) to be included in this aqueous phase of the dispersion. According to these passages, the preferred amounts of gelling agent(s) range from 3 to 20 wt.% for the hydrolysed starch derivative and from 0.5 to 5 wt.% for gelatin. If a gelling agent other than hydrolysed starch is used, its

concentration should be from 1 to 7 wt.%. However, the document makes it clear that the amount of gelling agent required depends on the particular agent used and the other ingredients and that for any particular aqueous phase composition the adequate amount of gelling agent can easily be determined by checking that the composition forms a gel (see page 4, lines 14 to 17). It is further stated that if the composition does not form a gel, this can be remedied by using a higher concentration of gelling agent and/or a different gelling agent (see page 4, lines 17 to 20). On page 3, lines 40 to 43, it is stated that it is essential that the composition constituting the aqueous phase is a gel-forming composition, i.e. the composition must contain one or more gelling agents in a concentration at or above the critical concentration of that aqueous composition. If a composition that does not gel is employed as an aqueous phase, then the product obtained is not satisfactory.

10. Therefore, in the Board's view, the specific ranges referred to in point 9 *supra* would be taken by the skilled person as very rough guidelines which should anyway be supplemented by empirical determination. Especially in the instance the aqueous phase contains more than one gelling agent and/or other ingredients such as thickening agents, the skilled person can be expected not to rely blindly on the ranges recited on page 4, lines 31 to 36 of document (1) but also to perform experimental tests in order to define the suitable amounts of gelling agent(s), one essential teaching of the document being that the composition **must** gel.

The subject-matter of claim 9

11. Claim 9 of the patent in suit embraces two possibilities, namely either the gelled aqueous phase comprises gelatin alone at a concentration of 1.0 to 7.5 times its critical concentration, or the gelled aqueous phase comprises gelatin (at a concentration of 1.0 to 7.5 times its critical concentration) and one or more gelling agents other than gelatin, with the proviso that if the latter are present, their concentration should be below their critical concentration. The critical concentration of a gelling agent is defined on page 5, lines 48 to 49 of the patent in suit as being the concentration at which said gelling agent will start to form a gel.

12. The Board is faced with establishing whether the skilled person wishing to prepare according to the teaching of document (1) a low fat spread with a fat content less than 23 wt.% (see page 2, line 42) in particular by following the indications given on page 4, lines 14-22 (see point 9 *supra*), would have prepared a product falling within the scope of claim 9 of the main request.

13. In relation to the issue of the novelty of claim 9 of the main request, the finding by the Board that one of the two possibilities covered by claim 9 explained in point 11 *supra* lacks novelty would be sufficient for the Board to deny the novelty of the entire claim.

14. In support of the novelty of claim 9, the Appellants relied on the sentence on page 3, lines 41-42 of document (1) where it is stated "the composition must contain one or more gelling agents at or above the critical concentration". In their submissions, the feature in claim 9 that the further gelling agent(s) be

present at a concentration **below** its (their) critical concentration distinguished the claimed product over that obtainable according to document (1). Yet the Board observes that once the quoted sentence is set in its original context by completion with "of that aqueous phase composition", it is the critical concentration of the **combination** of gelling agents in the aqueous phase that is meant rather than the critical concentration of the **single** components. This interpretation is consistent with the passage bridging pages 5 and 6 of the patent in suit, wherein it is stated that if the critical concentration of a mixture of gelling agents is to be determined, the composition of that mixture is kept constant and the concentration of said mixture is varied as if it consisted of only one single gelling agent. In the mixture, of course a component may occur at a concentration below the critical concentration. All that matters is that a gel is formed.

15. Further support for this interpretation of the sentence on page 3, lines 41-42 of document (1) comes from the indication in the same document that non gelling thickeners such as e.g. locust bean gum (LBG) or xanthan gum can synergistically interact and cause gel formation, thus behaving in combination as a gelling agent, and that mixtures of eg. LBG with carrageenan give stronger gels than carrageenan on its own (see page 4, lines 10-11 and Example 7). This way of viewing a mixture of carrageenan and LBG as a single gelling agent is again consistent with the passage bridging pages 5 and 6 of the patent in suit.

16. When considering the second option covered by claim 9 of the main request, ie, the case in which the aqueous phase comprises gelatin at a concentration of 1.0 to 7.5 times its critical concentration and one or more

gelling agent(s) at a concentration below their critical concentration, the Board observes as follows:

When operating according to the teaching of document (1), the skilled person is aware of the fact that a gel-forming composition should be used in the aqueous phase and that for this purpose the concentration of the combination of gelling agents must be at or above the critical concentration of that aqueous phase composition (see page 3, lines 40 to 43). The skilled person knows that if one of the gelling agents of the combination (eg. gelatin) is already present at a concentration which causes gel formation (i.e. above its critical concentration), the other additional agent may well be used at a concentration below its own critical concentration **as long as the synergistic effect is such that a gel is formed**. This is merely a matter of routine experimentation. Therefore, in the Board's view, the stated parameters of claim 9 are not adequate to create a proper distinction, in terms of novelty, between the claimed product and that obtainable according to document (1). For this reason, claim 9 lacks novelty under Article 54 EPC and consequently the main request of which this claim is part, is refused.

17. In view of the finding of point 16 *supra*, it is superfluous to decide the issue of whether document (1) is enabling or not for the manufacture of dispersions containing less than 23 wt.% fat with gelatin as the sole ingredient in the aqueous phase.

First auxiliary request

Article 123(2) and (3) EPC

18. The first auxiliary request differs from the main request in that the term "optionally" has been deleted. This limitation infringes neither Article 123 (2) nor Article 123(3) EPC.

Novelty of claim 9

19. Claim 9 of the main request covers both dispersions with gelatin alone in the aqueous phase and dispersion with gelatin in the aqueous phase above its critical concentration and one or more other gelling agents in a concentration in the aqueous phase below their critical concentration. This latter option has been found by the Board to lack novelty (see points 16 *supra*) and thus this conclusion should be extended to claim 9 of the first auxiliary request which is directed to this option.

Second auxiliary request

Articles 123 (2) and (3) EPC

20. Claim 9 of this request differs from claim 9 of the first auxiliary request by introduction of the product-by-process feature "said dispersion being obtainable by the process of claim 1". The exemplified dispersions are all made according to the process of claim 1. The amendment does not extend the protection conferred in comparison with the claim as granted. This feature thus infringes neither Article 123(2) nor 123(3) EPC.

Novelty of claim 9 (Article 54 EPC)

21. The Board has to decide whether the product-by-process feature is a measurable critical limitation for the recognition of novelty of the claimed dispersion. A process feature in a product claim can only be relied on for establishing novelty over the prior art, when that process feature necessarily means that the product has a particular characteristic and the skilled person following the teaching of the patent would inevitably achieve that characteristic, would be aware of that characteristic and would discard any product not having it. The Appellants provided no submission about a possible distinguishing feature exhibited by the claimed dispersion. However, the patent in suit on page 6, first and second paragraphs points out that the process of claim 1 involves breaking up a gelling aqueous phase resulting in gelled beads which show the result of this breaking up treatment in the form of an irregular shape, i.e., it is neither spherical nor ellipsoidal. In the conventional dispersions, eg. those according to document (1), the gelled aqueous phase is in the form of regularly shaped droplets.

22. However the Board finds it doubtful whether such a difference necessarily appears using the process of claim 1. Firstly, the passage of page 6 of the patent in suit is cautious and recites "..**can** have a structure which is different.." (emphasis added). Secondly, on page 3, lines 19-20 it is stated that "the gelled aqueous beads of the present process are generally difficult to visualize as in the present process the fat-continuous dispersion is normally formed before the gelation process is completed". This passage throws further doubts as to whether the beads constituting the aqueous phase of the claimed dispersion have an irregular shape and thus can be distinguished from the

beads constituting the aqueous phase of the dispersion of document (1), which beads are said to have a regular shape. Finally the Board observes that the two priority documents included microphotographs (Figures 1a to 3b) and a legend thereto at the end of each example, obtained with a light microscope at magnifications 400X and 1000X. No unambiguous conclusion as to the beads' shape can be drawn from these microphotographs. The ones at magnification 1000X appear to show a spherical rather than an irregular shape. This could possibly explain why Figures 1a to 3b and the legend thereto had not been included in the application as filed and the cautious statements made in the description in connection with the beads' shape.

23. In view of this, the Board cannot accept that the process feature necessarily confers to the claimed product a feature which distinguishes it unambiguously from that obtainable according to document (1). Thus for the same reasons outlined in point 16 *supra*, the subject-matter of claim 9 of this second auxiliary request lacks novelty under Article 54 EPC and consequently the request is refused.

Third auxiliary request

Articles 123 (2) and (3) EPC

24. The claims of this request differs from the corresponding claims of the previous requests in that in claim 9, the wording "other than gelatin" has been replaced with "of the group comprising native starch, hydrolysed starch and starch derivatives". This represents a limitation to starch derivatives of the other gelling agent(s) of claim 9 of the main request. This wording moreover finds a basis on page 3, lines 54 to 55 of the application as originally filed.

Therefore claim 9 does not infringe the requirements of Articles 123(2) and (3) EPC.

Novelty of claim 9

25. The conclusion of point 16 *supra* also applies to claim 9 of this request since document (1) contemplates the use of maltodextrins, i.e., a starch derivative as a second gelling agent (see last paragraph on page 3). For this reason, claim 9 lacks novelty under Article 54 EPC and consequently the request, of which it is part, is refused.

Fourth auxiliary request

Articles 123(2) and (3) EPC

26. The fourth auxiliary request differs from the main request in that claim 9 incorporates the features of its dependent granted claim 12, according to which there should also be present in the dispersion at least 0.02 wt.% of a O/W-promoter selected from the group consisting of protein, citric acid esters of monoglycerides, diacetyltartaric acid esters of monoglycerides, polyoxyethylene sorbitan esters of fatty acids, sucrose esters of fatty acids, stearoyl lactylates, sorbitan esters of fatty acids, lecithin and mixtures thereof. The claims of this request infringe neither Article 123(2) nor 123(3) EPC.

Novelty of claim 9

27. The conclusion of point 16 *supra* also applies to claim 9 of this request since document (1) contemplates the incorporation of emulsifiers (see page 5, lines 12-18). The use of Hymono 4404®, Cetodan®, Admul PGE 1411®, which are emulsifiers falling under the list of claim 9 is exemplified throughout document (1). For

this reason, claim 9 lacks novelty under Article 54 EPC and consequently also this request is refused.

Fifth auxiliary request

Articles 123(2) and (3) EPC

28. The fifth auxiliary request differs from the fourth auxiliary request in that in claim 9, the list of O/W promoters has been restricted to citric acid esters of monoglycerides or diacetyltartaric acid esters of monoglycerides. Neither Article 123(2) nor Article 123(3) EPC are infringed by said restriction.

Novelty of claim 9

29. Dispersions as claimed comprising citric acid esters of monoglycerides or diacetyltartaric acid esters of monoglycerides as O/W promoters are disclosed neither in document (1) nor in any other prior art document. The claim therefore fulfils the requirements of Article 54 EPC.

Inventive step of claim 9 (Article 56 EPC)

30. Document (1) teaches that the kind of emulsifier to be included within the spread is not critical and any emulsifier of the type and quantity as are commonly used in the spreads can be used (see page 5, lines 12 to 13). The claimed emulsifiers are commonly used ones and there is no evidence that they confer any special benefit. Nothing would dissuade the skilled person from using citric acid monoglycerides when formulating a spread in the light of document (1). In fact on page 8, line 5 and 6 of document (1), an acetic ester of monoglycerides is used which is chemically very similar to the citric acid esters of monoglycerides or diacetyl tartaric acid esters of monoglycerides. The Appellants

did not even argue that the use of the two families of emulsifiers of claim 9 represent an invention of selection, in the sense that the inclusion of them in the dispersion achieves unexpected advantageous effects. Therefore, the Board considers that claim 9 of this request does not satisfy the requirements of Article 56 EPC and this request comprising a non-allowable claim has to be refused.

Sixth auxiliary request

31. The sixth auxiliary request comprises only process claims 1 to 8, whose compliance with Articles 123(2) and (3), 54 and 56 EPC has already been established by the Board in points 1 to 7 *supra*. This request can thus be allowed.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the First Instance with the order to maintain the patent on the basis of the sixth auxiliary request as filed at the oral proceedings on 23 February 1996 and a description to be adapted.

The Registrar:

A. Townend

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE ★ CHAMBRES DE RECOURS DE L'OFFICE EUROPÉEN DES BREVETS ★ BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

The Chairman:

L. Galligani

Beglaubigt/Certified/Certifiée conforme: München/Munich

Geschäftsstelle Registry/Greffe

11. AUG. 1997