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D E C I S I O N
of 27 February 2003

Case Number: T 0181/01 - 3.3.5

Application Number: 90301561.8

Publication Number: 0383569

IPC: C12N 9/96

Language of the proceedings: EN

Title of invention:
Storage of materials

Patentee:
Inhale Therapeutic Systems

Opponent:
Roche Diagnostics GmbH
Novo Nordisk A/S
Elan Drug Delivery Limited
Akzo Nobel N.V.

Headword:
Storage of materials/INHALE

Relevant legal provisions:
EPC Art. 54(1), 56

Keyword:
"Novelty -yes, no absolute proof to the contrary"
"Inventive step - no, obvious alternative within reach of normal experimentation by a person skilled in the art"

Decisions cited:
-

Catchword:
-

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Case Number: T 0181/01 - 3.3.5

D E C I S I O N
of the Technical Board of Appeal 3.3.5
of 27 February 2003

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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted 11 December 2000 concerning maintenance of European patent No. 0 383 569 in amended form.**

Composition of the Board:

Chairman: R. K. Spangenberg
Members: G. J. Wassenaar
J. H. Van Moer

Summary of Facts and Submissions

I. The appeals are from the decision of the Opposition Division to maintain European patent No. 0 383 569 in amended form. Amended claim 1 reads as follows:

"A method of rendering a material storage stable at 20°C, which material is unstable in aqueous solution at room temperature of 20°C by forming said material, without freeze drying, into a composition comprising:
(i) a carrier substance which is water-soluble or water-swellable and is in a glassy amorphous state;
(ii) said material to be stored, which is dissolved in the said amorphous carrier substance,
said composition displaying a glass transition temperature of at least 20°C so as to exist in a glassy state at 20°C with the proviso that the carrier substance is not a compound selected from lactitol, lactose, maltose and sucrose mixed with diethylaminoethyldextran in weight ratio ranging from 200:1 to 1:10."

II. In the decision under appeal the Opposition Division rejected the product claims then on file, comprising the feature "non-freeze dried", for lack of clarity within the meaning of Article 84 EPC. Novelty and inventive step of the method claims were considered, inter alia, in view of

D5: "Modes of stabilization of a protein by organic solutes during desiccation" by J.F. Carpenter and J.H. Crowe in Cryobiology 25 (1988), pages 459-470.

D7: "The Glassy State and Survival of AnhydrousBiological Systems" by Michael J. Burke, in Membranes, Metabolism and Dry Organisms, Appendix D, pages 358-363, published 1986 by Cornell University Press.

D13: "The glassy state in certain sugar-containing food products" of G.W. White and S.H. Cakebread in Food Technology (1966) 1, pages 73-82.

D22: The article "Preservation of the enzymatic activity of rennin during spray drying and during storage, and the effect of sugars and certain other additives" of M.J. van de Beek and S.Y. Gerlsma in Neth. Milk Dairy Journal 23 (1969) pages 46-53.

D123: Declaration and experimental report by N.D. Osborne.

The subject-matter of amended claim 1 was considered to be novel because D22 neither disclosed the glass transition temperature (T_g) nor the residual moisture content of the spray dried compositions. Also the spray drying conditions in the examples were not so specified that performing the examples would necessarily produce products with the required T_g. In this respect reference was made to D123.

The Opposition Division did not regard D22 as a suitable starting point for an inventive step analysis because it did not mention the aim of obtaining a glassy composition with a T_g>20°C.

III. With the statement of the grounds of appeal, the appellant (patentee) filed new sets of claims. The main request comprised claims related to products and processes for obtaining such products. The product claims comprised the feature "non-freeze dried". The patentee argued that the said feature was clear and distinguished the products from freeze dried products.

IV. The appellants (opponents O2 and O3) maintained that the independent claims according to any of the requests lacked novelty and inventive step. New evidence was submitted which had already been presented in the UK High Court case HC 1999 No. 4555 between Inhale Therapeutic Systems Inc.(patentee)-v-Quadrant Healthcare plc.(predecessor of opponent O3). Comprised were experimental reports concerning processes according to the teachings of D22, expert opinions and statements of experts during cross-examination before the High Court. The evidence was numbered D126 to D130. Later in the proceedings further evidence relating to the High Court case was submitted numbered D136 to 142 of which D137, concerning extracts from the transcript of the cross-examination of Professor Pikal (expert witness for the patentee), remained relevant for this decision.

Further objections were raised on the grounds of unallowable extension by some of the amendments (Article 123(2) EPC) and insufficient disclosure (Article 83 EPC).

V. With the letter dated 24 September 2002 the patentee also filed documents relating to the said High Court case and new sets of claims (main request and first to eighth auxiliary requests). Each of the requests

comprised separate claims for the contracting states BE, CH, DE, FR, GB, IT, LI, NL and SE on the one hand and for DK on the other hand. As in the patent as granted the claims for DK did not comprise the disclaimer from an earlier patent application published after the filing date of the patent in suit (Article 54(3) EPC). When reference is made to claims in the following, the claims for the contracting states BE to SE are intended unless otherwise stated. The independent process claim 9 according to the main request read as follows:

"A method of rendering a material storage stable at 20°C, which material is unstable in aqueous solution at room temperature of 20°C, comprising dissolving the material in a carrier substance which is water-soluble or water-swellable, or in a solution thereof, so that the material is dissolved in said carrier substance, and evaporating water from the resulting mixture without freeze-drying, thereby forming the resulting mixture into a glassy amorphous state, said mixture displaying a glass transition temperature of at least 20°C so as to exist in a glassy state at 20°C with the proviso that the carrier substance is not a compound selected from lactitol, lactose, maltose and sucrose mixed with diethylaminoethyldextran in weight ratio ranging from 200:1 to 1:10."

During oral proceedings, which took place on 26 and 27 February 2003, the patentee amended the fifth and sixth auxiliary request by deleting claims 9 to 13 thereof.

VI. The arguments against novelty and inventive step of the method of claim 9 according to the main request, presented by the opponents, in sofar as they are based upon D22, may be summarized as follows:

D22 disclosed methods for rendering enzymes storage stable by spray drying aqueous solutions thereof in the presence of sugars. The spray-drying technique resulted in glassy products having a long shelf life. Although D22 did not disclose the T_g of the products it must have been over 20°C, considering the high T_g of the sugars, the severe drying conditions and the high storage stability. The only explanation for high storage stability given in the patent in suit was the formation of a glassy phase with a T_g higher than the storage temperature. If that explanation was correct for the products according to the patent in suit the same must apply for the products according to D22. Experiments performed according to the methods disclosed in D22 showed products having a T_g>20°C. Even if one would assume that the methods according to D22 did not automatically result in products with the required T_g, the only reason could have been insufficient drying conditions. Such products would have been rejected by the skilled person. In such cases it was obvious to improve the drying conditions to levels common in the art, ie a water content below about 5%, resulting in the provision of glassy products with the required T_g.

VII. The patentee's arguments with respect to novelty and inventive step may be summarized as follows:

The enzyme, rennin, discussed in detail in D22, was not unstable in aqueous solution and thus not a material within the meaning of present claim 1. D22 did not

disclose that the spray-dried materials were in a glassy amorphous state, let alone the relevance of the required T_g. There was no indication that the products should be dried to such low levels that a glassy state with the required T_g was obtained. Moreover, not only water reduced the T_g, also other small molecules, such as salts, could lower the T_g. The experiments were performed with hindsight and could therefore not prove that, without knowing the relevance of producing products with a high T_g, the skilled person, following the teaching of D22, would have obtained the products produced according to claim 9. The long term stability quoted in D22 was also not an indication of the presence of a glassy amorphous phase with a T_g>20°C because no comparison was made with the stability of aqueous solutions of rennin. Products insufficiently dried to provide a T_g>20°C could look like dry products and might have been sufficiently dry for normal use. Attributes such as "dry" and "completely dry", therefore, did not imply that the products so indicated were dried to such an extent that they had a T_g>20°C. The skilled person would have had no incentive to dry the product to a rest moisture content of a few percent. On the contrary the skilled person would have feared that by extensive drying the tertiary structure of proteins would be destroyed. Moreover, since drying is an energy consuming process, he would not dry more than necessary to obtain satisfactory stabilisation. Only with the knowledge of the patent in suit, that by drying to such an extent that the product has a T_g>20°C stabilisation can be improved, the skilled man would further dry to reach this goal. Reference was made to new citations numbered D142 to 153 of which the following remain relevant for this decision:

D147: "The effect of water vapour sorption by some amorphous pharmaceutical sugars" by B.C. Hancock and C.R. Dalton in Pharmaceutical Development and Technology, 4(1), 1999, pages 125-131.

VIII. The appellants (opponents O2 and O3) requested that the decision under appeal be set aside and that the European patent No. 0 383 569 be revoked.

The appellant (patentee) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the following sets of claims:

1. Main request and auxiliary requests 1 to 4 filed with the letter dated 24 September 2002.

2. Auxiliary requests 5 and 6 filed with the same letter under deletion of claims 9 to 13.

3. Auxiliary requests 7 and 8 filed with the letter dated 24 September 2002.

Reasons for the Decision

1. Claim 9 of the main request differs from claim 9 as granted by the additional feature that water is evaporated without freeze drying. The Board holds that this feature is based on the original application, wherein the disadvantages of freeze drying are repeatedly indicated. Since this feature does not play a role for this decision there is no need to discuss this in more detail.

2. As indicated in the patent in suit isolated biological active materials are generally unstable in solution at room temperature and many methods have been developed to stabilize such materials. One of such methods is spray drying of aqueous solutions comprising the active material in the presence of sugars as disclosed in D22. More specifically D22 discloses the spray drying of solutions of the enzyme rennin in the presence of sucrose and lactose. Spray dried rennin powders, containing sucrose and lactose, stored at room temperature did not lose biological activity after 250 days (paragraph 3.2).

3. The Board cannot accept the patentee's position that rennin is not a material according to present claim 9 because there is no proof that it is unstable in aqueous solution at 20°C. It is true that D22 does not disclose the biological activity of rennin stored in aqueous solutions, but it discloses that rennin is on the market as an aqueous solution (rennet), which for preservation contains 20% NaCl and 1% sodium benzoate (page 46, paragraph 1). This clearly shows that without preservation means rennin is not stable in aqueous solutions. Moreover, the whole article is related to the preservation of rennin during storage. As acknowledged in the patent in suit (page 2, lines 5-7), only a few biological active materials can be stored in aqueous solution, so that in the absence of evidence to the contrary it must be assumed that rennin is less stable in aqueous solution than as a spray dried powder in the presence of said sugars. The Board further observes that the patent in suit provides no test conditions to determine whether a material is unstable in aqueous solution, such as the composition of the solution and storage conditions, eg the presence of air

and light etc. Also in the examples of the patent in suit activities of the stored dry products have not been compared with those of aqueous solutions of the same biological material stored under the same conditions. Under these circumstances the rather vague expression "which material is unstable in aqueous solution at room temperature of 20°C" does not exclude the enzyme rennin.

4. D22 does not disclose that the spray dried mixture is in a glassy amorphous state. It is however known in the art of food preservation that many substances including protein solutions and sugar solutions can be converted into amorphous glasses and that by spray drying milk in the presence of lactose glassy products may be formed; see D13, page 73 under "The glassy state-general considerations" and page 74, Table 1. D13 further discloses that sucrose has a T_g of 67°C and lactose a T_g much higher than 20°C, and that sucrose glasses can be prepared by spray drying 20-40% aqueous solutions thereof (page 76, Table 2 and text below the table). Later literature mentions higher T_g values, eg 74°C and 112°C respectively for sucrose and lactose (D147, page 128, table 1). During the oral proceedings the opponents mentioned for lactose a T_g of 108°C, which was not contested by the patentee. Experiments conducted by opponent O3 confirmed that rennin containing powders obtained by spray drying according to D22 were amorphous, see D123, page 8, par.28, page 14, par.39; D126, exp. A, page 8; D128, exp. A, page 6, par.15. In fact the patentee did not dispute that by the spray drying process according to D22 amorphous powders were obtained, but maintained that these powders do not have, or at least not necessarily, a T_g>20°C.

5. T_g is measured by differential scanning calorimetry (DSC). At T_g there is a sudden change in the heat capacity of the material, which is an indication of a phase change. Although the phase change is also associated with a viscosity change, the latter change is rather smooth (D13, pages 73-76). The Board, therefore, does not dispute the patentee's argument that from the appearance of an amorphous material as being a dry, non sticky, powder at room temperature it cannot be deduced that its T_g is necessarily above 20°C. It was also known in the art that sugars could stabilise proteins in aqueous solutions during air drying and that more or less stabilized solid products were obtained comprising so much water that their T_g would probably be below 20°C (see D5, Fig. 1 to 5 and Table 1). Thus the fact that the product obtained by spray drying a protein in the presence of a sugar is highly stable at 20°C might be an indication for a high T_g, but it is no proof that it actually has a T_g>20°C.

6. As indicated above, pure lactose has a T_g of 108°C. Opponent O3 has submitted during oral proceedings that rennin has a T_g of about 120°C and that in a homogeneous mixture the T_g of the mixture is somewhere between the T_g-s of the components. These submissions were not contested by the patentee. The latter submission is in fact confirmed by report D143, page 34, par. 11.13 and page 35, paragraph 12.5 by Prof. Pikal (patentee's expert). It was known before the priority date of the patent in suit that the presence of water reduced the T_g; see D13, page 77 below Table 3 and D7, pages 359-360, Fig. D1 and D2. This is confirmed by various documents published after the priority date, see eg D147. According to D147, T_g of lactose is reduced from 112°C to 71°C if the water content is increased from 0

to 5% (page 128, Table 1). This is in agreement with the statement in the patent in suit that for carbohydrates T_g is depressed by about 6°C for each percent of moisture (page 4, lines 47-48). Applying this rule to lactose would mean that lactose containing 5% water would have a T_g of about 70°C and that lactose with a water content of 10% would have a T_g of about 40°C. The patentee has submitted that not only water depresses the T_g but that other low molecular compounds could also have this effect. Apart from the fact that the patentee has not provided any evidence to show the T_g reducing property of any other substance than water, the possible influence of other compounds seems not to be relevant for considerations of novelty and inventive step with respect to D22, because spray drying therein is not only performed with rennet containing NaCl as well as sodium benzoate as stabilizers, but also with pure rennin, obtained by dialysing rennet (pages 48-49, paragraphs 2.2, 3.1 and 3.2). Also Prof. Pikal did not contest that in order for a glass having a T_g>20°C not to be formed taking lactose as the stabilizing agent in the process according to D22, it should contain at least 10% of water (D137, page 244). On the basis of these facts and submissions, the Board must conclude that if it could be proved that the product obtained by spray drying rennin in the presence of lactose under the conditions mentioned in D22 had a moisture content below 10%, the subject-matter of claim 9 of the main request would lack novelty.

7. D22 indicates that the spray dried product is a dried powder and that it is stored in a desiccator but does not disclose the water content of the powder. Products are, however, generally only stored in a desiccator if their water content should remain at a low level. How

low this level actually was, remains uncertain. The high stability of the spray dried rennin powder in combination with the use of a desiccator to store the powder points to such a low moisture content that the T_g of the powder was likely to be above 20°C. This assumption in itself is, however, not sufficient to demonstrate an implicit disclosure of the method claimed in claim 9. Experiments performed by opponent O3 to repeat the process according to D22 provided glassy products with a T_g>20°C. In order to perform these experiments, however, it was necessary to make certain assumptions with respect to process conditions which were not explicitly disclosed in D22. Although these assumptions might have been reasonable, they are not suitable to show that D22 clearly and unambiguously discloses the process steps which would inevitably result in a product having a T_g>20°C, as required by claim 9. Thus there is insufficient evidence that the process of claim 9 lacks novelty.

8. In the absence of sufficient evidence that the method of claim 9 is not anticipated by D22, the question of inventive step over D22 has to be considered. The Board does not accept the Opposition Division's position that D22 is not a suitable starting point for an inventive step analysis because it is silent with respect to the glassy state of the product. In the Board's judgement, the technical field from which the closest prior art should be taken is not the field of forming glassy products. The technical problem addressed in the patent in suit is mainly that of making stable powders from products which are not stable in aqueous solution. Providing the product in a glassy state is presented in the patent as the key feature for solving that problem. Thus the lack of reference to a glassy phase does not

disqualify D22 as closest prior art. It follows from the novelty discussion that D22 is related to the same kind of products and has the same purpose as mentioned in the patent in suit, namely the provision of stable dry powder of enzymes. In the Board's view, therefore, the issue of inventive step should be considered in the light of D22.

9. The patentee has not compared his process and the products obtained therewith, with the methods and products disclosed in D22 and no advantages, such as improved stability or reduced production costs are apparent. The patentee's submission that the provision of stable products in a glassy phase as such is advantageous cannot be accepted. The glassy phase of the products is an observation which might be interesting from a scientific point of view and provides an explanation for the observed stability of the products, but it is not in itself a technical improvement. Thus, starting from D22, the problem underlying the invention is to be seen in the provision of a further method for obtaining stabilized enzymes in the form of dry powders which can be performed on a commercial scale. The patentee proposes to solve this problem by the method of claim 9 which requires producing a powder of the enzyme and the stabilizing sugar under such conditions that the mixture forms a glassy phase with a T_g>20°C. It is questionable whether the only example disclosing a T_g value, Example 2, is an example according to claim 9 because it is doubtful that by mixing 4 g vitrified sucrose with 0.4 ml of an LDH solution, the latter is actually dissolved in the

sucrose glass. It is, however, in view of the general preservation properties of sugar glasses, as explained in the description, credible that the solution as claimed solves the above mentioned problem.

10. Trying to solve the above mentioned problem the skilled person will supplement or modify the process parameters given in D22 with a view to obtain the same long-term stability as that indicated there. As a matter of routine, this requires the determination of the influence of the relevant process parameters of the spray drying process on the product properties. The purpose of a spray drying process is to obtain a dry powder, so that the dryness is prima facie an important parameter for selecting suitable spray drying conditions. The patentee's allegation that the skilled person is satisfied as long as his product looks dry and has no incentive to care about the water content cannot be accepted. The disclosure in D22 that the dry powder is stored in a desiccator implies for the skilled person that too much moisture is detrimental for the shelf life of the products. In the Board's view it is therefore evident that a skilled person will consider the water content as one of the most important parameters for obtaining the desired long-term stability of his spray dried products and will measure it. Especially if the process is to be performed at a commercial scale the Board has no doubt that such an important product parameter will be measured.

11. In the Board's view, a skilled person trying to adapt the technical teaching of D22, eg to other available conventional spray drying equipment, would orientate himself to the spray drying conditions mentioned in D22, such as the air-inlet and outlet temperatures, but

would not limit his considerations to the ranges given in D22 for the specific apparatus described therein. If the skilled person thereby would have obtained in a preliminary experiment a water content of more than 10% it is highly unlikely that he would have been satisfied even if the product looked dry at first sight. Knowing that a desiccator is needed for storage he would have modified the spray drying conditions so as to obtain a drier product. There is no warning in D22, or in any other document on file relating to the spray drying of enzymes, not to dry below a certain limit, let alone to avoid drying below 10% moisture. In the Board's view, therefore, the production of dry powders with any moisture content which can be obtained with a state of the art spray drying apparatus under conventional conditions should be considered as being an obvious modification of the teaching of D22. By his experiments to repeat the method disclosed in paragraph 2.2 of D22, Opponent O3 has demonstrated that, with the means available to the skilled person before the priority date of the patent in suit, it was possible to obtain lactose comprising powders which were so dry that their T_g was above 30°C (see also point 12 below). Also the examples in the patent in suit show that sugar containing solutions can be dried to a level whereby stable glasses are formed under relatively mild conditions, such as 24 hours at 36°C under 80% atmospheric pressure (Example 13). The patentee has in fact never argued that it was not possible to reduce the moisture content to such a level, but criticized the experiments of opponent O3 as being not in full agreement with the teaching of D22. In the Board's

view, with respect to the issue of inventive step, it is irrelevant whether or not the experiments were exactly in agreement with D22, as long as the deviations are not substantial.

12. Experiments made by opponent O3 confirm that with equipment available at the priority date of the patent in suit, following essentially the method disclosed in D22, even with sucrose as the stabilizing sugar, having a T_g lower than lactose, products are obtained having a moisture content of less than 4% and a T_g of at least 38 °C for at least 28 days (D126, RESULTS-VAN DE BEEK, after page 9). The fact that for practical reasons and lack of detailed conditions in D22, the experiments of D22 could not be duplicated exactly does not invalidate these results for the issue of inventive step. The deviations are small and the assumptions concerning the non-disclosed process conditions are common in the art of spray drying. The patentee's contention that the output temperatures of 83-86°C reported for the repetition were beyond the output temperature range of 80-85°C reported in D22 and could result in a difference in residual moisture content is not disputed (patentee's letter dated 11 January 2002, paragraph 3.7.6.1). In the Board's judgement, however, this difference, if noticeable at all, must be small. Anyhow, an outlet temperature of 85°C instead of 86°C could not reasonably have the effect that the T_g were to be reduced from 38°C to below 30°C. The considerable variation in the feed-flow rate noticed by the patentee (see Letter dated 11 January 2001, paragraph 3.7.6.4) can be explained by the use of a different spray drying apparatus, ie a Drytec Pilot Tower spray dryer instead of the Nubilosa laboratory spray dryer mentioned in D22, which was not available to opponent O3. In order

to prove lack of novelty opponent O3 has maintained the temperature conditions as close as possible to the ranges given in D22. Apparently this was not easily possible without relatively large variations in the feed-flow rate. The Board accepts therefore that in his experiments to prove lack of novelty opponent O3 has not reached optimum process conditions. There is, however, no reason to expect that a skilled person trying to solve the above-mentioned problem, and having sufficient time to optimize his spray drying conditions within the realm of D22, will produce products which are essentially different from those obtained by O3 in his repeat experiments according to D126. It is thus beyond reasonable doubt that a skilled person, at the priority date of the patent in suit, trying to produce spray dried storage stable rennin powder using lactose as stabilizing agent, essentially as set out in D22, would have produced a product having a T_g>20°C by simply making routine experiments using conventional apparatus.

13. The patentee's additional arguments as to why a skilled person would not have dried rennin in the presence of lactose or sucrose to such an extent that the composition has a T_g>20°C are not convincing. The Board does not dispute the patentee's argument that a skilled person might have hesitated to dry an enzyme containing product excessively, because he would fear a denaturation of the enzyme if no water was present at all. The Board can also accept professor Pikal's submission that it was thought that there might be an intermediate level of water that is optimal for stability and that a skilled person would not dry beyond this optimum (D145, paragraph 5.7). In the Board's opinion, however, it was obvious for a skilled

person to determine this optimum. Starting from the undisputed finding that the process of D22 results in glass formation it follows that in trying to find this optimum, the skilled person would have ended up with drying conditions which result in the formation of a glass having a T_g>20°C, as set out in point 12 above.

14. The Board also does not dispute the patentee's argument that, for energy considerations, a skilled person would not dry more than necessary. If it is found that below a certain water content stability or other relevant properties such as stickiness are no longer improved, the skilled person would of course not dry below that level. In the field of stabilizing enzymes, however, energy costs are relatively unimportant and would not prevent the skilled person from considering spray drying conditions which result in products of optimal shelf-life, ie with a water content below 10% (see point 11 above). As indicated in points 11 and 12 above, the Board is satisfied that by his routine experimentation, whereby drying conditions are varied, the skilled person would have detected that, for lactose as the stabilizing agent, rennin is more stable at a water content below 10% than above this level.

15. For these reasons the Board holds that the subject-matter of claim 9 of the main request lacks an inventive step over D22.

Auxiliary requests 1 and 2 comprise the same claim 9 so that the main request and auxiliary requests 1 and 2 must fail.

Claim 9 according to the third and fourth auxiliary request differs from claim 9 of the main request only in the exclusion of phosphofructokinase in trehalose as the carrier substance. Since this combination of compounds is not mentioned in D22, this disclaimer has no bearing on the inventive step argument based on D22.

Claims 1 according to the fifth and sixth auxiliary requests are drafted as use claims but have the same scope as claim 9 of the main request with the proviso that trehalose is excluded as carrier substance and the material to be stored is not alcohol oxidase or galactose oxidase (fifth auxiliary request), or the proviso that the material to be stored is not phosphofructokinase nor alcohol oxidase or galactose oxidase (sixth auxiliary request). Since the disclaimed compounds or combination of compounds are not mentioned in D22, these disclaimers, again, have no bearing on the inventive step argument based on D22.

Claim 9 according to the seventh and eighth auxiliary request differs from claim 9 of the main request only by the requirement that the carrier substance displays a glass transition temperature in the range from 20 to 150°C. Since it is undisputed that both sucrose and lactose have a T_g in that range, the inventive step arguments with regard to claim 9 of the main request equally apply to claim 9 of the seventh and eighth auxiliary request.

The corresponding claims for the contracting state DK do not comprise the proviso that the carrier substance is not a compound selected from lactitol, lactose, maltose and sucrose mixed with diethylaminoethyldextran

in weight ratio ranging from 200:1 to 1:10. They are thus broader than the claims for the other contracting states and must therefore fail for the same reasons.

Therefore, the subject-matter of none of the requests on file meets the requirements of Article 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

U. Bultmann R. Spangenberg