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**Datasheet for the decision
of 16 April 2013**

Case Number: T 2458/10 - 3.3.07

Application Number: 04010180.0

Publication Number: 1600151

IPC: A61K8/25, A61Q13/00, C11D3/50,
C11D3/12

Language of the proceedings: EN

Title of invention:
Perfume particles and a process for preparing the same

Patent Proprietor:
KAO CORPORATION

Opponent:
Henkel AG & Co. KGaA

Headword:
Perfume particles / KAO CORPORATION

Relevant legal provisions:
EPC Art. 56, 114(2)
RPBA Art. 13

Keyword:
Late-filed auxiliary requests - admitted (yes)
Inventive step - (no)

Decisions cited:

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 2458/10 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 16 April 2013

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
15 October 2010 concerning maintenance of
European Patent No. 1600151 in amended form.**

Composition of the Board:

Chairman: J. Riolo
Members: R. Hauss
D. T. Keeling

Summary of Facts and Submissions

- I. European patent No. 1 600 151 was granted on the basis of nine claims.
- II. Notice of opposition was filed in which revocation of the patent in its entirety was requested, based on the grounds of lack of novelty and lack of inventive step under Article 100(a) EPC in conjunction with Articles 52(1), 54 and 56 EPC.
- III. The documents cited during the opposition and appeal proceedings included the following:
- D1: WO 03/020867 A1
 - D4: EP 0 684 301 A2
 - D5: WO 94/19449 A1
 - D10: Experimental Report and Storage Experiments filed by the respondent with letter of 5 September 2011
 - D11: Table "Storage experiments on perfumed detergents" filed by the respondent with letter of 5 September 2011
 - D12: Experimental data filed by the respondent with letter of 29 December 2009
- IV. The appeal by the opponent lies from the interlocutory decision of the opposition division pronounced on 28 September 2010 and posted on 15 October 2010 finding that the amended main request filed on 28 September 2010 during oral proceedings met the requirements of the EPC.

Independent claim 1 of said request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, which is water-soluble or dispersible in water, the carrier material being selected from builders and anti-redeposition agents, and a water-insoluble silica as powdering agent,

which are obtainable by spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, wherein the powdering agent is present in an amount in the range of 1-5 wt.% based on the total weight of the carrier material, the perfume and the powdering agent."

In addition to several claims dependent on claim 1, the request further contains an independent claim directed to a process for preparing perfume particles as defined in claim 1 and independent claims directed to products comprising perfume particles according to claim 1.

- V. In the impugned decision the opposition division found that the subject-matter of the claims of the main request was novel over the disclosure of documents D1, D4 and D5. Two selections within the teaching of document D1 were required to arrive at the specific combination of carrier material and powdering agent defined in claim 1 of the main request. In the absence of any evidence that particles prepared according to the teaching of documents D4 and D5 were structurally identical to particles obtainable according to the process defined in claim 1 of the main request, the novelty of the claimed perfume particles over those disclosed in D4 and D5 was acknowledged.

Document D1 was regarded as the closest prior art for the assessment of inventive step. D1 disclosed a process for preparing perfume particles which involved mixing carrier particles with an aqueous perfume emulsion, instead of spraying the perfume onto carrier particles as required in claim 1 of the main request. Taking into account the experimental data presented in document D12, and in the absence of any data from counter-experiments, it had to be assumed that the

process of claim 1 resulted in perfume particles which were different from those obtainable with the emulsification process of D1. The technical problem was defined as the provision of alternative perfume particles. The skilled person starting from the teaching of D1 would have found no incentive in the prior art to change the preparation process and to select carrier materials which had a specific functionality as builders or anti-redeposition agents. Hence the subject-matter of the main request involved an inventive step.

- VI. The appellant (opponent) lodged an appeal against that decision, submitting that the subject-matter of claim 1 lacked novelty over the disclosure of D4 and D5 and was not inventive over the teaching of D1.
- VII. With the reply to the statement setting out the grounds of appeal the respondent (patent proprietor) filed four sets of claims designated as main request and first to third auxiliary requests. The claims of the main request were identical to the claims of the request on which the decision under appeal was based.
- VIII. The parties were summoned to oral proceedings.
- IX. In a communication issued in preparation of oral proceedings and advising the parties of the board's preliminary opinion, the board observed that the wording of claim 1 of the main request "spraying the perfume onto the carrier material" did not appear to exclude the possibility that the perfume might be applied in the form of an aqueous emulsion. It was furthermore mentioned, with regard to the auxiliary requests, that the required support in the application as filed had not been indicated by the respondent, in particular concerning the origin of the wording: "the

carrier material ... represents a builder or anti-redeposition agent".

- X. With a letter dated 12 April 2013, the respondent submitted a main request and thirteen auxiliary requests. The main request was identical to the previous main request. The second, sixth and tenth auxiliary requests were respectively identical to the previous first, second and third auxiliary requests.

Claim 1 of the first auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, which is water-soluble or dispersible in water, the carrier material being selected from builders and anti-redepositions agents, and a water-insoluble silica as powdering agent, which are obtainable by atomizing the perfume by the means of a commercially available perfume sprayer and spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, wherein the powdering agent is present in an amount in the range of 1-5 wt.% based on the total weight of the carrier material, the perfume and the powdering agent."

Claim 1 of the second auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, and a water-insoluble silica as powdering agent, which are obtainable by spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, wherein the carrier material is water-soluble or dispersible in water and represents a builder or anti-

redeposition agent selected from the group consisting of poly(meth)acrylic acid and salts thereof; cellulose; cellulose derivatives; starch; hydrolysates of starch; sucrose and polysaccharide acetate, and wherein the powdering agent is present in an amount in the range of 1-5 wt.% based on the total weight of the carrier material, the perfume and the powdering agent."

Claim 1 of the third auxiliary request corresponds to claim 1 of the second auxiliary request but additionally includes the following feature from claim 1 of the first auxiliary request: "...atomizing the perfume by the means of a commercially available perfume sprayer and ...", inserted after "obtainable by".

Claim 1 of the fourth auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, which is water-soluble or dispersible in water, the carrier being selected from builders or anti-redeposition agents, and a water-insoluble silica as powdering agent, which are obtainable by spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, and wherein the powdering agent is present in an amount in the range of 1-5 wt.% based on the total weight of the carrier material, the perfume and the powdering agent, wherein the carrier material is selected from the group consisting of poly(meth)acrylic acid and salts thereof;

cellulose; cellulose derivatives; starch; hydrolysates of starch; sucrose and polysaccharide acetate."

Claim 1 of the fifth auxiliary request corresponds to claim 1 of the fourth auxiliary request but additionally includes the feature: "*...atomizing the perfume by means of a commercially available perfume sprayer and ...*", inserted after "*obtainable by*".

Claim 1 of the sixth auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, and a water-insoluble silica as powdering agent, which are obtainable by spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, wherein the carrier material is water-soluble or dispersible in water and represents a builder or anti-redeposition agent selected from the group consisting of poly(meth)acrylic acid and salts thereof; cellulose; cellulose derivatives; starch; hydrolysates of starch; sucrose and polysaccharide acetate, and wherein the powdering agent is present in an amount in the range of 1-5 wt.% and the perfume is present in an amount of 10-35 wt.% based on the total weight of the carrier material, the perfume and the powdering agent."

Claim 1 of the seventh auxiliary request corresponds to claim 1 of the sixth auxiliary request but additionally includes the feature: "*...atomizing the perfume by means of a commercially available perfume sprayer and ...*", inserted after "*obtainable by*".

Claim 1 of the eighth auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, which is water-soluble or dispersible in water, the carrier being selected from builders and anti-redeposition agents, and a water-insoluble silica as powdering agent, which are obtainable by spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, wherein the carrier material is water-soluble or dispersible in water and represents a builder or anti-redeposition agent, and wherein the powdering agent is present in an amount in the range of 1-5 wt.% and the perfume is present in an amount of 10-35 wt.% based on the total weight of the carrier material, the perfume and the powdering agent, wherein the carrier material is selected from the group consisting of poly(meth)acrylic acid and salts thereof; cellulose; cellulose derivatives; starch; hydrolysates of starch; sucrose and polysaccharide acetate."

Claim 1 of the ninth auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, which is water-soluble or dispersible in water, the carrier being selected from builders or anti-redeposition agents, and a water-insoluble silica as powdering agent, which are obtainable by atomizing the perfume by means of a commercially available perfume sprayer and spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing,

and wherein the powdering agent is present in an amount in the range of 1-5 wt.% and the perfume is present in an amount of 10-35 wt.% based on the total weight of the carrier material, the perfume and the powdering agent, wherein the carrier material is selected from the group consisting of poly(meth)acrylic acid and salts thereof; cellulose; cellulose derivatives; starch; hydrolysates of starch; sucrose and polysaccharide acetate."

Claim 1 of the tenth auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, and a water-insoluble silica as powdering agent, which are obtainable by spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, wherein the carrier material is water-soluble or dispersible in water and is selected from poly(meth)acrylic acid and salts thereof; wherein the perfume is present in an amount of 10 to 35 wt.% and the powdering agent is present in an amount in the range of 1-5 wt.% based on the total weight of the carrier material, the perfume and the powdering agent."

Claim 1 of the eleventh auxiliary request corresponds to claim 1 of the tenth auxiliary request but additionally includes the feature: "...atomizing the perfume by means of a commercially available perfume sprayer and ...", inserted after "obtainable by".

Claim 1 of the twelfth auxiliary request reads as follows:

"1. Perfume particles comprising a perfume, a carrier material, and a water-insoluble silica as powdering agent, which are obtainable by spraying the perfume onto the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing, wherein the carrier material is selected from water-soluble poly(meth)acrylic acid and salts thereof; wherein the perfume is present in an amount of 10 to 35 wt.% and the powdering agent is present in an amount in the range of 1-5 wt.% based on the total weight of the carrier material, the perfume and the powdering agent."

Claim 1 of the thirteenth auxiliary request corresponds to claim 1 of the twelfth auxiliary request but additionally includes the feature: *"...atomizing the perfume by means of a commercially available perfume sprayer and ..."*, inserted after *"obtainable by"*.

- XI. Oral proceedings were held before the board on 16 April 2013, during which the admission of the new auxiliary requests filed for the first time on 12 April 2013 and the issue of inventive step were discussed.
- XII. The appellant's arguments can be summarised as follows:
Admission of the new auxiliary requests
The new auxiliary requests submitted for the first time on 12 April 2013 (i.e. the first, third to fifth, seventh to ninth and eleventh to thirteenth auxiliary requests) should have been filed earlier and should not now be admitted into the proceedings. Even if, as the respondent claimed, the new requests were a reaction to

the board's communication transmitted to the parties by telefax on 2 April 2013, ten days had still elapsed until the requests were actually filed, on a Friday. As a result, only one working day had been available to the appellant before the oral proceedings for analysing the new requests. Moreover, several of the new requests contained a feature taken from the description, directed to atomising the perfume by means of a commercial sprayer, which was an unexpected modification taking the appellant by surprise.

Inventive step - main request

Document D1, which disclosed the preparation of perfume particles, was the closest prior art. The selection of a specific combination of technical features of the perfume particles, each of those features being known from the technical teaching of D1, had not been shown to result in a surprising technical effect. According to the patent in suit, silica was used in the same function as in document D1, viz. to protect the perfume and to provide a flowable powder. The selection of the carrier from builders and anti-redeposition agents was arbitrary because no unexpected technical effect was obtained. The preparation process mentioned in claim 1 differed from the preparation process disclosed in document D1 solely in that it involved a step of spraying the perfume onto the carrier material. Contrary to the respondent's allegations, that step was not restricted to spraying only neat perfume oil, and it did not result in particles structurally different from those obtained according to the process of D1. The objective technical problem was the provision of further perfume particles. To the skilled person, spraying was an obvious equivalent routine measure to replace mere mixing in the preparation of perfume

particles. In any case, spraying perfume onto detergent granules and powdering the granules with silica were both known as conventional routine measures in the field of detergent technology.

Inventive step - auxiliary requests

The wording "atomizing the perfume by (the) means of a commercially available perfume sprayer" which had been introduced into claim 1 of the first auxiliary request (and several further auxiliary requests) did not change the situation with regard to the assessment of inventive step. Such wording did not imply that only neat perfume oil could be sprayed or atomised and had no effect on the claimed scope with regard to particle structure.

The requirement, in the second to thirteenth auxiliary requests, of selecting the carrier material from certain specified organic materials did not add an inventive element to the claimed scope. Document D1 mentioned organic carrier materials, including starch. To use starch as the carrier material was thus merely an arbitrary selection among the materials explicitly mentioned in D1. Organic materials such as starch were moreover well-known alternative carrier materials for perfumes, also known from the teaching of documents D4 and D5. Poly(meth)acrylates were also generally known as suitable carrier materials and did not represent an inventive choice.

As far as the perfume concentration of 10 to 35% by weight required in the sixth to thirteenth auxiliary requests was concerned, perfume loadings in that range were not incompatible with the method of preparation taught in document D1, since the aqueous perfume emulsion which was applied to the carrier material

could contain a high concentration of perfume and might contain only a low amount of water (e.g. 20% mentioned on page 5, line 6, of D1). The respondent had failed to present convincing evidence that perfume particles with a perfume loading of 10 to 35% could not be obtained by spraying an aqueous emulsion onto carrier particles.

XIII. The respondent's arguments can be summarised as follows:

Admission of the new auxiliary requests

Said requests had been filed in response to some formal points raised, for the first time in the proceedings, in the board's communication. The respondent did not intend to create a new situation resulting in a different line of argument on inventive step. Rather, the modifications presented merely involved a clarification of the feature concerning the application of perfume onto the carrier material, or they provided alternative variations of the claim wording which kept more closely to the wording used in the original application. To avoid unnecessary delays, the respondent had filed the new requests several days before the oral proceedings rather than on the day itself, and had also sent its submission directly to the appellant by telefax.

Inventive step - main request

The claimed perfume particles differed from the perfume particles described in document D1 not only by the choices of carrier material and type and amount of the powdering agent but also by structural features defined in terms of a product-by-process feature.

The feature of claim 1 according to which the perfume particles were obtainable by spraying perfume onto the carrier material and subsequently adding a powdering

agent resulted in a specific structure of the claimed particles, with most of the hydrophobic perfume located on the surface of the hydrophilic carrier material and with the powdering agent sticking to the perfume. A different particle structure was obtained by the process described in document D1, which required mixing the carrier with an aqueous perfume emulsion, resulting in the incorporation of the perfume inside the granular carrier material. Referring to the experimental data provided in document D12, the respondent also held that silica did not adhere to perfume particles prepared according to the method of document D1.

The objective technical problem was to be defined as providing non-sticky, free-flowable perfume particles having good storage and fragrance characteristics. Evidence of the inventive particles' favourable properties was provided by the data in documents D10 and D11 and in test 1 described in paragraph [0059] of the patent in suit.

Only a low amount of silica was used for dusting the claimed perfume particles, to ensure that the particles remained soluble or dispersible in water. It was surprising to the skilled person, and it could not have been derived from the teaching of the prior art, that an embodiment in which most of the perfume remained on the particle surface could remain sufficiently protected and stable upon storage with use of only a low amount of powdering agent.

Inventive step - auxiliary requests

The wording "atomizing the perfume by (the) means of a commercially available perfume sprayer" present in claim 1 of the first and several other auxiliary requests further emphasised the intended meaning that only the neat perfume oil was to be applied to the

carrier material. That resulted in a characteristic structure of the perfume particles with most of the perfume oil located on the particle surface. The distinctive structure of the claimed perfume particles was the key feature on which inventive step was based.

The selection of specified organic carrier materials as indicated in the second to thirteenth auxiliary requests constituted another difference over the disclosure of document D1. It was evident from the claims of D1 and from the only example, in which the preferred carrier material - sodium chloride - was used, that document D1 focused on inorganic carriers only. In that context, the mention of starch on page 7 of D1 was a discrepancy and was clearly erroneous. The carrier materials according to the second to thirteenth auxiliary requests, further distinguished in that they were builders or anti-redeposition agents, were thus not taught or suggested in document D1.

Claim 1 of each of the sixth to thirteenth auxiliary requests defined a high perfume loading of 10 to 35% by weight. The perfume loadings addressed in document D1 were much lower, e.g. up to 2%, because it was impossible to obtain high perfume loadings when using the emulsification process of D1, especially with hydrophilic water-soluble or water-dispersible carrier materials as required in the patent in suit. Using the preparation process of the patent in suit, the skilled person would know, based on general knowledge, to choose small particles with large surface areas in order to obtain a high perfume loading.

Poly(meth)acrylic acid specified as the carrier material in the tenth to thirteenth auxiliary requests was known as a material which easily absorbed water. Under the process conditions of D1, the material would

swell or dissolve, and it could not incorporate high perfume loadings. According to the twelfth and thirteenth auxiliary requests, the carrier material was to be selected from water-soluble poly(meth)acrylic and salts thereof, which was the material used in the test described in document D12.

XIV. The appellant requested that the decision under appeal be set aside and that the patent be revoked.

XV. The respondent requested that the appeal be dismissed or that the patent be maintained on the basis of one of the first to thirteenth auxiliary requests filed on 12 April 2013.

Reasons for the Decision

1. The appeal is admissible.

2. Main request - inventive step

Patent in suit

2.1 The patent in suit seeks to provide non-sticky, free-flowable perfume particles suitable for use in powder detergents and cleansing agents (see the patent specification, paragraphs [0016]-[0018] and [0039]). The perfume particles should also be resistant to storage with respect to the properties of flowability and fragrance (see the patent specification, paragraphs [0039] and [0042]).

2.2 According to the patent in suit this problem is solved by perfume particles comprising perfume, a water-soluble or water-dispersible carrier material selected from builders and anti-redeposition agents, and a water-insoluble silica as powdering agent. The particles may be obtained by providing the carrier

material in particulate form, spraying the perfume onto the carrier particles and subsequently adding the powdering agent during mixing.

It is explained in the patent in suit (see the patent specification, paragraphs [0017], [0034] and [0041]) that the described process of preparation leads to the wetting of the carrier material by the perfume, and to the adhesion of the powdering agent to the perfume on the carrier surface and to the carrier. The powdering agent prevents the perfume particles from sticking together during storage and/or under pressure.

Closest prior art

2.3 Both parties regarded document D1 as the closest prior art for the assessment of inventive step. The board sees no reason to differ.

2.4 Document D1 relates to a process for making perfumed coloured speckles for use in particulate laundry detergent compositions. The perfumed particles are prepared by mixing an aqueous perfume emulsion and a colorant with an inorganic granular carrier material and layering the resultant material with a finely divided porous particulate material (D1: claim 5 and page 6, lines 15 to 25). The layering material is employed to provide a dry layer to protect the emulsified perfume and to provide a flowable powder (D1: page 7, lines 26 to 29).

The preferred carrier material of D1 is sodium chloride. Other materials may however be used; *inter alia* certain materials are listed which are builders, e.g. sodium tripolyphosphate, sodium metasilicate or sodium carbonate (D1: page 7, lines 11 to 20). The porous layered material is in particular selected from silicas, silicates and crystalline alkali metal

aluminosilicates (D1: page 8, lines 1 to 2). The concentration of the layering agent is 0.1 to 10% by weight based on the speckles (D1: page 8, lines 11 to 12).

Technical problem

- 2.5 In the framework of the problem-and-solution approach employed by the boards for assessing inventive step, the technical problem is defined on the basis of the technical effects achieved by the claimed subject-matter when compared with the closest prior art.
- 2.6 Thus, in a first step it must be established in which features the claimed subject-matter differs from the disclosure of document D1.
- 2.6.1 With regard to the qualitative and quantitative composition of the perfume particles, several selections within the teaching of D1 are required to arrive at the specific combination of technical features defined in claim 1 of the present main request: selection of the carrier material to be a builder, selection of the layering material (or powdering agent) to be water-insoluble silica and selection of the concentration of the layering material to be in the range of 1 to 5% by weight based on the total weight of the carrier material, the perfume and the powdering agent.
- 2.6.2 Since claim 1 is a "product-by-process" type claim, any structural features or properties of the claimed particles which will inevitably result from their process of preparation as defined in the claim must also be taken into account.

Claim 1 of the main request specifies that the perfume particles are "obtainable by spraying the perfume onto

the carrier material supplied in the form of particles during agitation and subsequently adding the powdering agent during mixing".

According to the respondent's argumentation, this wording implies that the perfume is sprayed in the form of the neat perfume oil, and it excludes the possibility that the perfume could be applied to the carrier in admixture with further components, e.g. in the form of an aqueous emulsion such as described in D1. From this alleged difference in the composition of the perfuming liquid the respondent derived a difference in the structure of the resulting perfume particles, arguing that the neat perfume oil used according to the patent in suit was hydrophobic and would remain mostly on the surface of the hydrophilic carrier particles, whereas the aqueous perfume emulsion of D1 had a hydrophilic character and would interact with the material of the carrier particles to incorporate the perfume in the interior of the particles.

The board does not share the respondent's views on the scope of the claim language. The perfume particles are defined in claim 1 as "comprising" a perfume, a carrier material and a water-insoluble silica, which means that the composition of the particles is in principle open to the presence of further components (as also mentioned in paragraph [0035] of the patent specification). According to the definition of the preparation process in claim 1, the perfume is applied onto the carrier particles by spraying. This condition is met if a sprayable liquid containing perfume oil is sprayed onto the particles. While said sprayable liquid may, in one embodiment, consist of neat perfume oil only, alternative options involving the presence of other components in admixture with the perfume oil are

not actually excluded. Spraying an aqueous emulsion containing perfume oil onto the carrier is technically possible and would meet the process requirement of "spraying the perfume onto the carrier material".

The respondent has submitted that the patent in suit does not mention a process step of forming a sprayable premix of the perfume. In particular, such a step is not described in the context of the preparation of the perfume particles according to examples 1, 2 and 5 to 8 of the patent in suit. Nevertheless, the mere fact that such an embodiment is not mentioned in the description cannot lead by itself to the conclusion that it is excluded by the claims.

In consequence, the only difference of the process of claim 1 over the process described in document D1 is the more specific application method of "spraying ... onto the carrier material ... during agitation" instead of "mixing" with the carrier material.

The board sees no reason to assume that spraying during agitation, in comparison with other methods of mixing, would inevitably result in a structurally different product and/or in a product having different properties.

Hence the requirement that the perfume particles be obtainable according to the process defined in claim 1 does not confer any additional characteristics upon the claimed particles which could distinguish them from particles described in document D1.

- 2.7 In a second step, the technical effects achieved by the claimed subject-matter, based on the distinguishing features over the closest prior art, must be determined.

According to the respondent, silica is used as an anti-caking agent to promote flowability, and to protect the perfume. That is however the known typical function of a powdering agent, which is also described in D1, where it is mentioned that the layering material (i.e. the powdering agent) is used to provide a dry layer to protect the emulsified perfume and to provide a flowable powder (D1: page 7, lines 26 to 29). No particular technical effect has been linked to the selection of the carrier from builders and anti-redeposition agents or to the specified concentration range of 1-5% by weight of silica powdering agent.

2.8 In the absence of any evidence of an unexpected technical effect linked to a distinguishing feature of the claimed perfume particles over the disclosure of document D1, the technical problem may be defined as the provision of further perfume particles.

2.9 In the light of the description, the board is convinced that that problem is solved by the perfume particles defined in claim 1 of the main request.

Obviousness in view of the prior art

2.10 Choosing a builder as the carrier material, silica as the powdering agent and a range of 1 to 5% by weight as the concentration of the powdering agent are all variations which are envisaged or even explicitly suggested in document D1 (see paragraph 2.4 *supra*), and thus any of those choices, alone or in combination, would have been contemplated by the skilled person seeking to provide further perfume particles in the knowledge of the teaching of D1.

2.11 As a consequence, the subject-matter of claim 1 of the main request does not involve an inventive step within the meaning of Article 56 EPC.

Additional arguments presented by the respondent

2.12 Structural features of the claimed particles

2.12.1 As mentioned earlier, the respondent held that the perfume particles as claimed had a specific three-dimensional structure, most of the perfume being located on the surface of the carrier material and the powdering agent being attached to the perfume.

The preparation process disclosed in document D1, due to interaction of the aqueous emulsion with the carrier material, resulted in a structure incorporating the perfume inside the granular carrier material. Referring to the data presented in document D12, the respondent also argued that silica did not adhere to perfume particles prepared by applying an aqueous perfume emulsion to a particulate water-soluble or water-dispersible carrier material.

2.12.2 According to the test described in document D12, two samples of perfume particles were compared.

To prepare the "inventive sample", 2 g of perfume oil was added to 8 g water-soluble poly(sodium acrylate) while stirring with a spatula. To the mixture, 0.415 g of water-insoluble silica was added and stirred with a spatula.

To prepare the "comparative sample", 1 g of a perfume emulsion was prepared containing 0.375 g perfume oil, 0.25 g emulsifier and 0.375 g water. The perfume emulsion was added to 8.975 g of water-soluble poly(sodium acrylate). 0.1 g of silica was added to the mixture.

Component		Inventive example	Comparative example
Water-soluble polymer	Poly(sodium acrylate), polymerisation degree 2,000 to 70,000	77 wt% (8 g)	89 wt% (8.975 g)
Perfume oil	Natural lavandin oil	19 wt% (2 g)	4 wt% (0.375 g)
Water-insoluble silica	Florite® (available from Tokuyama Corporation)	4 wt% (0.415 g)	1 wt% (0.1 g)
Emulsifier	Polyoxyethylene alkyl ether (Emulgen® 707 available from KAO Corporation)	-	2 wt% (0.25 g)
Water		-	4 wt% (0.375 g)

Samples of each particle type were analysed using a field-emission-type scanning electron microscope. The SEM observation showed that silica particles were present at the polymer particle surfaces of the "inventive" sample (D12: figure 1). Considerably fewer silica particles were found at the polymer particle surfaces of the "comparative" sample (D12: figure 2).

2.12.3 Upon analysis of the data presented in D12, the board considers that there is no conclusive evidence that the observed difference was indeed due to the use of an aqueous emulsion instead of neat perfume oil for the preparation of the comparative sample. Several parameters which could have an impact on the adhesion of silica were varied in the experiment, including the concentrations of perfume oil and silica, which were much lower in the comparative sample. It is not certain whether the observed difference in the adhesion of silica to the perfumed carrier is due to the variations in the ingredient concentrations or to the emulsification of the perfume.

2.12.4 Hence, it could not justifiably be argued that, simply by specifying that the perfume particles comprise a water-insoluble silica as powdering agent in an amount in the range of 1 to 5% by weight, claim 1 of the main request implicitly excludes the possibility that those particles are obtainable by a process involving an aqueous perfume emulsion. Nor would such an argument be borne out by the teaching of document D1, which envisages particles covered with up to 10% by weight of layering material.

2.13 Fragrance characteristics

2.13.1 In the tests described in documents D10 and D11 the same compositions of "inventive example" and "comparative example" as described in D12 were examined for storage stability. In the case of both samples, the fragrance characteristics of a fabric detergent composition containing the perfume particles remained essentially the same before and after storage.

2.13.2 Based on the result reported for the "inventive" example, the respondent held that it was surprising that perfume particles in which most of the perfume remained on the particle surface could remain sufficiently stable with regard to fragrance, although only a low amount of powdering agent was used.

2.13.3 In fact, the scope of claim 1 is not restricted to perfume particles in which most of the perfume is located on the surface of the carrier particles. Neither is such a feature explicitly mentioned in claim 1 (or indeed anywhere in the patent specification), nor has the respondent provided proof that it must be implicit. The proportion of the perfume that remains on the outside of the carrier particles or is absorbed depends not only on the composition of the impregnating liquid, but is generally determined by

parameters such as surface area and porosity of the particles and the affinity between the material of the particles and the perfuming liquid. None of these factors is indicated in the definition of claim 1, so due to the broad possible scope no definitive conclusions are possible regarding the structure of the perfume particles or the degree of coverage to be obtained with 1 to 5% of powdering agent.

- 2.13.4 As a consequence, the respondent's argument that a technical prejudice was overcome could not be taken into account in the assessment of inventive step.
3. Admission of the first, third to fifth, seventh to ninth and eleventh to thirteenth auxiliary requests
 - 3.1 The requests concerned were filed at a late stage of the appeal proceedings, viz. only four days before the oral proceedings.
 - 3.2 According to Article 13(1) of the Rules of Procedure of the Boards of Appeal (RPBA), any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion, which shall be exercised in view of *inter alia* the complexity of the new subject-matter, the current state of the proceedings and the need for procedural economy. According to Article 13(3) RPBA, amendments sought to be made after oral proceedings have been arranged shall not be admitted if they raise issues which the Board or the other party or parties cannot reasonably be expected to deal with without adjournment of the oral proceedings.
 - 3.3 In its communication issued in preparation of the oral proceedings, the board mentioned, in the context of establishing how the claimed subject-matter was

distinguished from the prior art D1, that the wording of claim 1 of the main request did not appear to exclude the possibility that the perfume might be applied in the form of an aqueous emulsion. The board furthermore observed, with regard to the auxiliary requests then pending, that the required support in the application as filed had not been indicated by the respondent, in particular concerning the origin of the statement that the carrier material "represented" a builder or anti-redeposition agent.

- 3.4 According to the respondent, the introduction of the feature "atomizing the perfume by means of a commercially available perfume sprayer" into claim 1 of the first, third, fifth, seventh, ninth, eleventh and thirteenth auxiliary requests was intended to make it clearer that it was the perfume as such which was sprayed onto the carrier material, and not an aqueous emulsion of the perfume. In claim 1 of the fourth, fifth, eighth, twelfth and thirteenth auxiliary requests the wording was modified with regard to the selection of the carrier material, in order to be more in line with the wording used in the application as filed.
- 3.5 Hence it is credible that the additional auxiliary requests were filed as a reaction to the board's preliminary communication. Furthermore, the amendments are not of a highly complex nature and they do not shift the focus of the inventive step discussion.
- 3.6 As a consequence, the board finds it appropriate to exercise its discretion under Article 114(2) EPC and Article 13 RPBA by admitting the first, third to fifth, seventh to ninth and eleventh to thirteenth auxiliary requests into the proceedings.

4. First auxiliary request - inventive step
 - 4.1 Claim 1 of the first auxiliary request differs from claim 1 of the main request solely by the addition of the feature "atomising the perfume by the means of a commercially available perfume sprayer".
 - 4.2 In addition to the statement that when preparing the perfume particles "the perfume" is sprayed onto the carrier material, the amended claim also states that "the perfume" is atomised. This does not change anything about the fact that the perfume could be sprayed (or atomised) either in the form of the neat perfume oil or in the form of a liquid sprayable mixture containing the perfume, such as an aqueous perfume emulsion. Both options are within the scope of the claim (see paragraph 2.6.2 *supra*).
 - 4.3 Since the amendment does not result in any further distinguishing technical feature of the claimed perfume particles over the disclosure of document D1, it does not change the situation with regard to the assessment of inventive step.
 - 4.4 As a consequence, the subject-matter of claim 1 of the first auxiliary request does not involve an inventive step, for the same reasons as explained in the context of the main request.
5. Second to fifth auxiliary requests - inventive step
 - 5.1 According to claim 1 of the second auxiliary request, the water-soluble or water-dispersible carrier material "represents" a builder or anti-redeposition agent selected from the group consisting of poly(meth)acrylic acid and salts thereof, cellulose, cellulose derivatives, starch, hydrolysates of starch, sucrose and polysaccharide acetate.

The board proceeds on the assumption that the expression "represents", which finds no literal basis in the text of the application as filed, was intended to mean that the carrier material is to be selected from builders or anti-redeposition agents which pertain to the specified group. No different meaning has been indicated by the respondent.

Said feature thus has the same meaning as the corresponding feature in claim 1 of the fourth auxiliary request: *"...the carrier being selected from builders or anti-redeposition agents, ... wherein the carrier material is selected from the group consisting of poly(meth)acrylic acid and salts thereof; cellulose; cellulose derivatives; starch; hydrolysates of starch; sucrose and polysaccharide acetate"*.

- 5.2 The carrier materials according to the second and fourth auxiliary requests are organic and thus are different from the inorganic carrier used according to claim 5 of document D1.
- 5.2.1 It has not been shown that any particular technical effect is linked to the choice of the listed organic carrier materials. Hence, in the case of the second and fourth auxiliary requests, the technical problem starting from the teaching of document D1 is once more to be defined as the provision of further perfume particles.
- 5.2.2 It is acknowledged in the patent in suit that cellulose, starch and poly(acrylic acid) derivatives were known in the prior art as carrier materials for perfume particles (see paragraphs [0008] and [0011] of the patent specification).

Document D1 suggests adding organic materials to the inorganic carrier as binders, such as acrylic polymers

or cellulosic materials (D1: page 8, lines 14 to 24). Document D1 furthermore mentions that the granular carrier material may be any suitable material compatible with granular detergent compositions and goes on to mention corn starch as a suitable material (D1: page 7, line 11 to 20). Although only an embodiment using an inorganic carrier material is actually claimed in D1, the mention of starch as a feasible alternative option does not appear to be erroneous and devoid of any technical teaching.

Prior-art documents D4 and D5 teach perfume particles in which the perfume is encapsulated in a matrix of starch or other organic carbohydrate-type materials (D4: page 5, lines 10 to 31, page 4, lines 40 to 56; D5: example 1).

- 5.2.3 Thus the use of the suggested carrier materials in perfume particles was known from the prior art. The choice of known equivalent materials would have been obvious to the skilled person as an option for providing further particles and cannot therefore provide a contribution to inventive step.
- 5.3 Claim 1 of the third auxiliary request is identical to claim 1 of the second auxiliary request except for the added feature specifying that the perfume is atomised by means of a commercial sprayer. The same relationship exists between claim 1 of the fifth auxiliary request and claim 1 of the fourth auxiliary request. As explained in the context of the first auxiliary request (see points 4 to 4.3 *supra*), the additional process feature does not result in a different structure of the perfume particles and thus has no impact on the assessment of inventive step.

5.4 For these reasons, the subject-matter of claim 1 of each of the second to fifth auxiliary requests does not involve an inventive step.

6. Sixth auxiliary request - inventive step

6.1 Claim 1 of the sixth auxiliary request corresponds to claim 1 of the second auxiliary request but specifies additionally that the perfume is present in the perfume particles at 10 to 35% by weight based on the total weight of the carrier material, the perfume and the powdering agent.

6.2 The respondent submitted that the concentration range of 10 to 35% by weight was a distinguishing feature over the disclosure of document D1. While conceding that D1 did not explicitly define an upper limit for the perfume concentration, the respondent held that it was impossible to achieve high perfume loadings with the preparation process taught in D1, which involved forming an aqueous perfume emulsion and applying that emulsion to the particulate carrier material. Thus it was implicit in the teaching of D1 that high perfume loadings were excluded. In support of that argument, the respondent referred to solubility data provided in document D12.

6.3 It appears from said data that the ratio of emulsifier to perfume (Emulgen 707 and Lavandin oil) had to be adapted to obtain stable aqueous emulsions containing 19% perfume oil in the emulsion (D12: page 3 and table 2). According to the comparative example described on page 1 of D12, a homogeneous transparent aqueous perfume emulsion containing 37.5% of perfume oil was prepared.

It was however not examined in D12 whether a perfume loading in the final perfume particles of 10% (based on

the total weight of the carrier material, the perfume and the powdering agent) could in principle be obtained by using aqueous perfume emulsions according to the teaching of document D1.

- 6.4 The data presented in document D12 is not in conflict with the general teaching of D1. The respondent has however failed to explain how those data could serve as conclusive proof that it would be impossible to prepare perfume particles with a perfume loading of 10% by applying aqueous perfume emulsions to a carrier material. The respondent mentioned speculatively that the carrier material might dissolve or swell due to contact with the aqueous emulsion. The possible detrimental extent of such an effect can however not be assessed in the absence of experimental data. Not all of the carrier materials specified in claim 1 of the sixth auxiliary request are water-soluble. Drying steps are not excluded in D1.
- 6.5 Based on the available information, the board has thus arrived at the conclusion that the specified range of 10 to 35% perfume loading has not been established with certainty as a distinguishing feature of the claimed perfume particles over the disclosure of document D1. Hence, that feature cannot be taken into consideration in the definition of the technical problem.
- 6.6 For these reasons and for the reasons explained in the context of the second auxiliary request (see paragraphs 5.2 to 5.2.3 *supra*), the subject-matter of claim 1 of the sixth auxiliary request does not involve an inventive step within the meaning of Article 56 EPC.

7. Seventh to ninth auxiliary requests - inventive step
 - 7.1 Claim 1 of each of the seventh to ninth auxiliary requests specifies that the carrier material is selected from the organic materials as listed in the second auxiliary request and contains the requirement of 10 to 35% by weight perfume loading as defined in the sixth auxiliary request. Claim 1 of both the seventh and ninth auxiliary requests furthermore contains the feature "atomising the perfume by the means of a commercially available perfume sprayer".
 - 7.2 As explained above in the context of the first and sixth auxiliary requests, the features concerning a high perfume loading and atomising the perfume by means of a commercially available sprayer do not result in a distinguishing feature over the disclosure of document D1 and therefore have no impact on the assessment of inventive step. As explained in the context of the second auxiliary request, the choice of organic carrier materials from the listed compounds must be regarded as obvious in the light of the prior art.
 - 7.3 As a consequence, the subject-matter of claim 1 of each of the seventh to ninth auxiliary requests does not involve an inventive step within the meaning of Article 56 EPC.
8. Tenth to thirteenth auxiliary requests - inventive step
 - 8.1 Claim 1 of each of the tenth to thirteenth auxiliary requests corresponds, respectively, to claim 1 of the sixth to ninth auxiliary requests, with the exception that the choice of the mandatory carrier material is further restricted to poly(meth)acrylic acid and salts thereof (tenth and eleventh auxiliary requests) or to

water-soluble poly(meth)acrylic acid and salts thereof (twelfth and thirteenth auxiliary requests).

- 8.2 No evidence has been presented that the choice of poly(meth)acrylates could result in an unexpected technical effect. Thus said restrictions do not change the situation with respect to the argumentation presented in the context of the sixth and second auxiliary requests, leading to the conclusion that the choice of poly(meth)acrylates is a known equivalent option and therefore obvious in the light of the prior art (see paragraphs 5.2 to 5.2.3 *supra*).
- 8.3 As a consequence, and for the same reasons as presented in the context of the sixth to ninth auxiliary requests, the subject-matter of claim 1 of the tenth to thirteenth auxiliary requests does not involve an inventive step within the meaning of Article 56 EPC.
9. In view of the conclusions reached with regard to inventive step, the board is not required to examine the issues of added subject-matter or novelty or to analyse any other independent claims of the requests on file.

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:



L. Fernández Gómez

J. Riolo

Decision electronically authenticated