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**Datasheet for the decision
of 15 May 2008**

Case Number: T 0306/05 - 3.3.07

Application Number: 95301809.0

Publication Number: 0674899

IPC: A61K 7/32

Language of the proceedings: EN

Title of invention:
Deodorant compositions

Patent Proprietors:
UNILEVER PLC, et al

Opponents:
01) The Procter & Gamble Company
02) HENKEL AG & Co. KGaA

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 84

Relevant legal provisions (EPC 1973):
EPC Art. 54, 56, 84

Keyword:
"Clarity of an unspecified percentage (no) - main request"
"Novelty (no) - main request"
"Inventive step (no) - 1st and 2nd Auxiliary Requests"

Decisions cited:
-

Catchword:
-



Case Number: T 0306/05 - 3.3.07

D E C I S I O N
of the Technical Board of Appeal 3.3.07
of 15 May 2008

Appellants:

(Patent Proprietors)

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 3 January 2005
revoking European patent No. 0674899 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: S. Perryman
Members: B. Struif
G. Santavicca

Summary of Facts and Submissions

I. The appeal lies against the decision of the opposition division to revoke European patent No. 0 674 899. The patent in suit was granted with 9 claims. The only independent claim 1 read as follows:

"A packaged concentrated deodorant composition for topical application to the human skin, comprising an aerosol container having a discharge valve, the valve being adapted to allow the contents of the container to be discharged at an initial discharge rate of less than 0.3 g/s, the composition comprising a perfume, a deodorant agent, a solvent vehicle for the composition, and a propellant."

II. The patent was opposed by opponents 01 and 02 (respondents) on the grounds of Article 100 (a) EPC , i.e. lack of novelty and lack of an inventive step and in addition on the ground of Article 100(b) EPC (insufficient disclosure; opponent 01 only). The oppositions were supported *inter alia* by the following documents:

D1: US-A-4 935 224;

D2: GB-A-1 555 044;

D3: US-A-5 068 099;

D6: US-A-5 082 652;

D7: International Cosmetic Ingredient Dictionary and handbook, Eighth Edition, 2000, pages 1740 and 1741;

D11: Montford A. Johnson: The Aerosol Handbook, pages 501 and 502;

D13a: Derwent Abstract of JP-A-02 03 2190.

D13b: Partial German translation of JP-A-02 03 2190

During the opposition proceedings the following further document was cited:

D15: Standard FEA 643-E, "Evaluation of discharge rate" (Filled Aerosol Packs), September 1993, pages 1 to 3.

III. The appealed decision was based on the claims as granted (main request) and on eight auxiliary requests filed with letter dated 13 August 2004 with the following amendments:

First auxiliary request

Claim 1 of the First auxiliary request differed from claim 1 as granted in the following feature:

"..., characterised in that the deodorant agent excludes short chain mono- and polyhydric alcohols such as ethanol, isopropanol and propylene glycol."

Second auxiliary request

The second auxiliary request comprised two independent claims. Claim 1 of that auxiliary request had the following wording:

"1. A method of deodorizing the human body comprising the topical application to the human skin of a packaged concentrated deodorant composition comprising a perfume, a deodorant agent, a solvent vehicle for the composition, and a propellant, said application being from an aerosol container having a discharge valve, the valve being adapted to allow the contents of the

container to be discharged at an initial discharge rate of less than 0.3 g/s."

Claim 11 of the Second auxiliary request differed from claim 1 as granted in the following feature:

"..., characterised in that the deodorant agent is a solid."

Third auxiliary request

The Third auxiliary request comprised three independent claims 1 to 3, all concerning a packaged concentrated deodorant composition. Each of the claims 1 to 3 differed from claim 1 as granted in the following feature, respectively:

"1. ... , characterised in that the solvent vehicle acts as a solvent vehicle for the deodorant agent."

"2. ... , characterised in that the solvent vehicle comprises at least 20% of ethanol."

"3. ... , characterised in that the deodorant agent is a solid."

Fourth auxiliary request

Claim 1 of the Fourth auxiliary request was identical to claim 1 according to the Third auxiliary request.

Fifth auxiliary request

Claim 1 of the Fifth auxiliary request was identical to claim 2 according to the Third auxiliary request.

Sixth auxiliary request

Claim 1 of the Sixth auxiliary request was identical to claim 3 according to the Third auxiliary request.

Seventh auxiliary request

Claim 1 of the Seventh auxiliary request differed from claim 1 as granted in the feature "...**solid** deodorant agent" (the additional term in bold has been emphasised by the board) and in the following additional feature:

"... , characterised in that the solvent vehicle acts as a solvent vehicle for the deodorant agent."

Eighth auxiliary request

Claim 1 of the Eighth auxiliary request differed from claim 1 as granted in the feature "a **solid** deodorant agent" (the additional term in bold has been emphasised by the board) and in the following additional feature:

"... , characterised in that the solvent vehicle comprises at least 20% of ethanol."

IV. The opposition division held that:

- (a) As regards the ground of insufficient disclosure, the feature "initial discharge rate" had a

specific meaning according to the patent in suit. Further, D3 gave also a definition of that term. Since an appropriate European test for measuring the initial discharge rate had been standardised (D15), the skilled person was given sufficiently clear and complete information to reproduce the claimed subject-matter.

- (b) The subject-matter of claim 1 of the main request was anticipated by the aerosol composition of D13a, because the known aerosol composition comprised the ingredients of claim 1 of the main request and allowed a discharge rate of 0.1 to 0.5 g/s at 25°C. Further novelty objections arose from any of D1, D2 and D6.
- (c) The subject-matter of claim 1 of the First to Seventh auxiliary requests was anticipated by the disclosure of either document D6 or that of document D13a.
- (d) The additional features according to claim 1 of the Eighth auxiliary request i.e. that the deodorant composition contained a solid deodorant agent and that a solvent vehicle comprised at least 20% of ethanol, were not disclosed in any of documents D1, D2, D3, D6 or D13b. Therefore, the subject-matter of claim 1 of that auxiliary request was novel.
- (e) As regards inventive step of the subject-matter of claim 1 according to the Eighth auxiliary request, D13a was considered as the closest state of the art. The claimed subject-matter differed from D13a

in that it contained a solid deodorant agent and a perfume. The technical problem to be solved by the patent in suit was to provide an alternative deodorant composition to that of D13a.

The formation of a deodorant composition by using a perfume was a matter of choice for providing an alternative composition, all the more D1 disclosed an antiperspirant composition containing a fragrance. A solid deodorant agent in a deodorant composition was known from example 1 of D6. Therefore, the skilled person starting from the composition of D13a with the aim of providing a further deodorant composition would have modified it by using the technical teaching of documents D1 and D6. Thus, the claimed subject-matter was obvious in view of the cited prior art documents and did not involve an inventive step.

- V. On 9 March 2005, the proprietors (appellants) filed a notice of appeal against the above decision. With the statement setting out the grounds of appeal received on 13 May 2005, the appellants submitted an amended set of claims as the Main request as well as two auxiliary requests specified as the Ninth and Tenth auxiliary requests. The Main request corresponded to the Fifth Auxiliary Request underlying the decision under appeal. By letters dated 22 and 29 September 2005, the respondents submitted *inter alia* the following further documents:

D13c: complete English translation of JP-A-02 03 2190;
D24: Ullmann's Encyclopedia of Industrial Chemistry, 5th edition, Vol. A24, 1993, pages 228-230;

D25: Ullmann's Encyclopedia of Industrial Chemistry, 5th edition, Vol. A11, 1988, pages 167 to 170 and 233.

- VI. In a communication dated 17 January 2008, the board addressed the points to be discussed during the oral proceedings, in particular in relation to insufficiency, novelty and inventive step.
- VII. By letter of 15 April 2008, the appellant confirmed the order of their three requests submitted with the statement setting out the grounds of appeal as follows: Main request (Fifth auxiliary request underlying the decision under appeal), First and Second auxiliary requests (Ninth and Tenth auxiliary requests, respectively, submitted with the statement setting out the grounds of appeal).
- VIII. Oral proceedings were held on 15 May 2008, at which the appellant submitted two amended sets of claims designated as 1st and 2nd Auxiliary Requests replacing the two auxiliary requests filed with the statement setting out the grounds of appeal.

Claim 1 of the 1st Auxiliary Request had the following wording:

"1. A packaged concentrated deodorant composition for topical application to the human skin, comprising an aerosol container having a discharge valve, the valve being adapted to allow the contents of the container to be discharged at an initial discharge rate of less than 0.3 g/s, the composition comprising a perfume, a deodorant agent **that is a metal salt based on aluminium, zirconium, zinc, or mixtures thereof**, a solvent vehicle

for the composition, and a propellant, **characterised in that the solvent vehicle comprises ethanol.**"

Claim 1 of the 2nd Auxiliary Request had the following wording:

"1. A packaged concentrated deodorant composition for topical application to the human skin comprising an aerosol container having a discharge valve, the valve being adapted to allow the contents of the container to be discharged at an initial discharge rate of less than 0.3 g/s, the composition comprising a perfume, a deodorant agent **that is zinc phenolsulphonate**, a solvent vehicle for the composition, and a propellant, **characterised in that the solvent vehicle comprises ethanol**".

The additional features in bold are emphasised by the board to show the differences to granted claim 1.

IX. The appellant argued in substance as follows:

Main Request

- (a) As regards clarity, in the amended feature of claim 1 "characterised in that the solvent vehicle comprises at least 20% of ethanol", the solvent vehicle comprised everything except for the propellant and the active ingredient. The percentage of ethanol had a clear meaning independently from the quantity of the solvent vehicle in the whole composition. According to the patent in suit, ethanol was not a deodorant agent. In the example of the patent specification, the

percentage of the ethanol referred to "% by weight".

- (b) As regards sufficiency of disclosure, the term "initial discharge rate" had a specific meaning in the patent in suit. D3 also gave a definition of that term. An appropriate test method for measuring the initial discharge rate was provided in the European standard D15, which the skilled person would use for determining the defined parameter. Thus, the skilled person was given sufficiently clear and complete information to be able to reproduce the claimed subject-matter.
- (c) As regards novelty, the patent in suit made a clear difference between perfume and deodorant agent as being separate components of the composition. The skilled person knew what a deodorant was. D13c disclosed an aerosol composition comprising (A) an aerosol carrier consisting of 30-60 vol.-% water, 20-60 vol.-% ethyl alcohol and/or isopropyl alcohol, 11-40 vol.-% combustible liquid gas, (B) 0.1-10 wt.-% of (A) of vaporisation retarder and (C) 0.1-12 wt.-% of effective ingredients. The claimed subject-matter comprised a separate deodorant agent in addition to ethanol being no deodorant agent according to the patent in suit. The claimed subject-matter differed from Example 2 of D13c in that the antiperspirant composition contained a perfume. Example 3 of D13c contained L-menthol, which however was no deodorant agent as shown by D7. In D3, benzyl alcohol used in example 1 was no deodorant agent either. Consequently, the features

of the subject-matter of claim 1 of the main request were not anticipated by the disclosure of any of D13c and D3.

1st Auxiliary Request

- (a) The amended claims had a basis in the application as filed.
- (b) As regards novelty, the claimed discharge rate was not met by the composition of example 1 of D1.
- (c) As regards inventive step, D13c described the closest state of the art. In D13c, however, no link was given between reducing spray rates and reducing volatile organic components (VOC). The problem in D13c was to replace chlorofluorocarbon (CFC) propellants by other propellants. The subject-matter of claim 1 of the main requests differed from the disclosure of document D13c by the combination of a deodorant agent and a specific initial discharge rate. Compared with example 2 of D13c, the claimed subject-matter provided an improvement due to the presence of a perfume and a lower spray rate. The technical problem solved over D13c was the provision of an aerosol deodorant that was of similar or greater efficacy whilst at the same time meeting environmental concerns. There was no teaching in D13c nor in the other documents on file for the claimed combination of features comprising a specified composition sprayed at a specific low spray rate. The claimed subject-matter had less features in common with D1 and D2 than with D13c

so that D1 and D2 were less suitable starting points than D13c. Thus, the subject-matter of claim 1 of the 1st Auxiliary Request was not obvious and involved an inventive step.

2nd Auxiliary Request

The deodorant agent defined in claim 1 of the 2nd Auxiliary Request provided more distance from the cited prior art and made the claimed products particularly effective as shown in the patent in suit. Consequently, the claimed subject-matter of the 2nd auxiliary request involved an inventive step.

- X. The respondents (opponents 01 and 02) argued in substance as follows:

Main request

- (a) As regards clarity, the amended percentage of ethanol in claim 1 was indefinite and could be taken as "% by volume" or "% by weight", which possibility provided a considerable difference to the claimed composition. Furthermore, the definition of claim 1 was open to further ingredients and thus could include other vehicles, and did not exclude ethanol as a deodorant agent either as required by the patent specification. The skilled person could not distinguish nor detect which part of the ethanol in the composition acted as deodorant agent or as a solvent vehicle. Since the amount of solvent vehicle was not defined, the percentage of the

ethanol in the final composition was not limiting and not suitable to provide a distinction over the cited prior art.

- (b) As regards insufficiency, the patent in suit did not disclose methods for determining the initial discharge rate. Since different standards existed in different territories and gave different results, European standard D15 could not be referred to. Furthermore, the discharge rates depended on the duration of discharge, the temperature of the container, the pressure of the container and the construction of the valve, as shown in D11. Thus, the initial spray rate either had no limiting effect or was insufficiently disclosed. Since the patent in suit did not provide any instructions concerning conditions which should be applied to measure the spray rate, the ground of opposition under Article 100(b) EPC was made out.
- (c) As regards novelty, the deodorant agent defined in claim 1 should be construed broadly as being suitable for masking or making undesirable odours imperceptible. No clear distinction between perfumes and deodorant agent in the patent in suit was made, since "deoperfumes" were suitable agents. D13c disclosed aerosol compositions comprising an effective ingredient, water, ethanol and/or isopropanol and a liquified gas which could be sprayed at the rate of 0.1 to 0.5 g/s at 25°C falling under the terms required by claim 1. Example 3 of the D13c disclosed a body cologne aerosol comprising L-menthol which was discharged

at a rate of 0.2 g/s. L-menthol was suitable for masking undesired body odour and actually was a deodorant agent as shown by D24 and D25. Also example 1 of document D3 illustrated a composition, in which benzyl alcohol was used as a deodorant agent. Hence, the subject-matter of claim 1 of the Main Request lacked novelty over the compositions illustrated in any of D3 and D13c.

1st Auxiliary Request

- (a) The amended feature "a metal salt based on aluminium, zirconium, zinc, or mixtures thereof" in claim 1 had no proper basis in the application as filed.
- (b) The subject-matter of claim 1 according to the 1st Auxiliary Request was not novel over the disclosure of D1, in particular that of example 1.
- (c) As regards inventive step, D13c was a suitable starting point. It disclosed an antiperspirant aerosol composition comprising an antiperspirant agent, ethanol, and a propellant, which composition was discharged at a rate of 0.1 - 0.5 g/s. The claimed subject-matter differed from example 2 of D13c by the spray rate and by the presence of a fragrance or perfume. No evidence had been provided that those differences led to any improvements. Thus, the technical problem over D13c was to provide a further composition with a pleasant odour. D13c also disclosed the use of fragrances and perfumes as in the composition of example 3. Furthermore, according to D1, low spray

rates were desirable to avoid dusting and bounce-off and perfumes were conventional additives for aerosol antiperspirants. When starting from example 3 of D13c, the claimed subject-matter was distinguished only by a specific metal salt as deodorant agent. Aluminium salts were however used as antiperspirant in D13c itself and L-menthol was an alternative deodorant agent to aluminium salts (D24). The claimed subject-matter was thus obvious from D13c itself or by a combination with D24.

- (d) Furthermore, D1 and D2 could be used as suitable starting point for assessing inventive step of the subject-matter of the 1st Auxiliary Request and led to the same conclusion. Therefore, the claimed subject-matter lacked an inventive step also when starting from D1 or D2.

2nd Auxiliary Request

- (a) No formal objections were raised with respect to the amended claims of the 2nd Auxiliary Request.
- (b) As regards inventive step, there was no evidence showing that zinc phenol sulphonate had any specific benefits over compositions described in D13c. Since zinc phenol sulphonate was a known deodorant agent, it could be used to replace those used in the compositions of D13c in order to provide alternative compositions. Thus, the subject-matter of the 2nd Auxiliary Request did not involve an inventive step either.

XI. The appellants (patent proprietors) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the Main Request submitted with the statement setting out the grounds of appeal or on the basis of the amended claims according to the 1st or the 2nd Auxiliary Request submitted at the oral proceedings on 15 May 2008.

XII. The respondents (opponents 01 and 02) requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

Main request

Amendments

2. Claim 1 of the main request includes the feature "the solvent vehicle comprises at least 20% of ethanol". That feature is based on the application as filed (page 6, lines 7 to 10). The respondents did not raise any objections against the amendment. The board has no reasons to take a different position. Thus, the requirements under Article 123(2) and (3) EPC are met.

Clarity

3. Article 84 EPC is a requirement of the EPC that should be fulfilled for substantive amendments made to the patent during opposition procedures if objections arise out of the amendments made (Case Law of the Boards of

Appeal of the European Patent Office, 5th edition, 2006, VII.C.6.2). Opposition divisions and the Boards of Appeal both have the power to deal with those objections. Since in the present case the amended feature "the solvent vehicle comprises at least 20% of ethanol", was not part of the granted claims but is only based on the description, the admissibility of the amendment has to be examined with respect to the requirements of Article 84 EPC.

- 3.1 The claimed percentage of "20%" is without any reference to its basis such as "weight, mass, mole or volume". In a liquid composition any percentage, however, must have a basis. This may be, for example, a reference to "% by mole", "% by volume" or "% by weight". In the deodorant compositions underlying the patent in suit, where liquid solvent vehicle (paragraph [0022]) and solid deodorant agents (paragraph [0018]) are involved, the skilled person would consider both "% by volume" and "% by weight" as an appropriate basis. Although the components, including ethanol, of the deodorant composition according to example 1 are given in "% by weight" (paragraph [0040]), this does not allow the conclusion that the percentage of the solvent vehicle as claimed is also based on "% by weight". The percentage of the ethanol only refers to the "solvent vehicle" as part of the final composition. Furthermore, the reference to "% by weight" is not defined in claim 1 so that this argument, having no basis in claim 1 itself, cannot be accepted.

Since the solvent vehicles are liquids, often or mostly organic components, percentages on a volume basis are convenient to use. This is confirmed by the cited prior

art, for example, by document D13c, wherein the aerosol product defined in claim 1 *inter alia* includes "a component system at 20°C comprising 30-60 vol.% water, 20-60 vol.% ethyl alcohol and/or isopropyl alcohol and 11-40 vol.% flammable liquefied gas of which dimethyl ether forms the main component".

- 3.2 In claim 1 of D13c, the liquid or liquified components are thus defined in % by volume, whilst the other components, such as the effective ingredients which are referred to the final composition are defined in % by weight. The amount of ethanol required or permissible according to claim 1 would be significantly different depending on whether the percentage refers to "% by weight" or "% by volume" due to the different densities of the liquids, ethanol (0.79 g/cm³) and water (1 g/cm³).
- 3.3 Although the appellants argued that the solvent vehicle covered everything except the propellant and the active ingredient of the final composition, there is no basis for that definition in the patent in suit nor in claim 1 of the Main Request. Not only the separate components defined in claim 1 also include a perfume but the final deodorant composition which is defined *inter alia* by the term "comprising", may include other vehicles not necessarily covered by the term "solvent vehicle". Furthermore, that the deodorant agent used in the compositions excludes ethanol is mentioned (see paragraph [0017]). From this exclusion it can however be derived that ethanol is a deodorant as well but should not be considered under the function "deodorant agent". However, claim 1 is not restricted in that respect, so that the claimed subject-matter does not distinguish whether ethanol acts as deodorant and/or

only as solvent vehicle; the proportion of the solvent vehicle in the final composition is also not defined. Therefore, the percentage of ethanol based on the undefined portion of the solvent vehicle has no limiting effect whatsoever with respect to the **final** composition.

- 3.4 It follows from the above that the ethanol percentage as part of the solvent vehicle raises objections as follows: Claim 1 does not define whether or not that percentage refers to "% by volume" or "% by weight", both options being however possible according to the patent in suit; further, there is no restriction in claim 1 that ethanol is only part of the solvent vehicle but not part of the deodorant agent; nor is there any reference to any definite content of the solvent vehicle in the final deodorant composition, which thus cannot be limited by the claimed percentage. Consequently, the feature "20 % of ethanol" for indicating a portion of the solvent vehicle does not provide any clear and concise definition of the claimed subject-matter meeting the requirements of Article 84 EPC.

Novelty

4. There also exists the further objection that this amendment would not lead to novel products over the cited prior art, in particular example 3 of D13c.
- 4.1 D13c discloses a packaged aerosol product characterized in that a single pack aerosol composition obtained by the addition with respect to the total volume and such that a uniform dissolution phase is formed of 0.1 -12

wt.% effective ingredient and 0.1 to 10 wt.-% evaporation inhibitor with a high flash point, to a component system at 20°C comprising 30-60 vol.% water, 20-60 vol.% ethyl alcohol and/or isopropyl alcohol and 11-40 vol.% flammable liquefied gas of which dimethyl ether forms the main component, is filled into a pressure-resistant container for an aerosol, and a spraying apparatus for an aerosol which permits a spray rate per unit time of 0.1-0.5 g/sec at 25°C is fitted onto the said pressure-resistant container (claim 1). Those aerosol products can be used as antiperspirant aerosols or body perfume aerosols (page 4, 4th full paragraph). Example 3 illustrates an aerosol composition in the form of a body perfume comprising: 2 g perfume, 0.2 g L-menthol, 5 ml glycerol, 20 ml 99% denatured alcohol, 47.8 ml purified water, 24 ml dimethyl ether (DME) as propellant and 1.0 ml liquid petroleum gas (LPG). The LPG may be propane, isobutane, n-butane or a mixture thereof (page 5, lines 14 and 15). The stock solution is filled in a pressure-resistant container having a specific valve. After introducing a mixture of DME and LPG under pressure a button with a spray hole diameter of 0.3 mm and a middle orifice diameter of 0.3 mm is attached onto the container. The spray rate of that aerosol product is 0.2 g/sec at 25°C (page 9, first and second paragraphs).

- 4.2 According to the patent in suit ([paragraph [0011]]), the initial spray rate defined in the claims refer to the state "when the container is full". This definition is in line with the disclosure of D3, according to which the discharge rate is measured by the initial testing after packaging (col. 14, lines 17 to 25). Thus, it is plausible to interpret claim 1 in line with the

description. In example 3 of D13c, reference is made to filling the stock solution in the pressure resistant container and introducing DME and LPG under pressure to prepare the body perfume aerosol product (page 9, first paragraph). The spray rate of this aerosol product is 0.2 g/sec at 25 °C (page 9, second paragraph). In D13c, the spray rate thus also refers to the initial spray rate, i.e. when the container is full, and is defined in g per unit time in sec (g/s).

4.3 The respondents argued that discharge rates were dependent on the viscosity, the content of non-volatile solids content, the amount of propellant and the pressurization level. However, no such further definitions are given in the patent in suit. Thus, the term "initial spray rate" must be construed broadly so that it covers initial spray rates measured immediately after the container has been filled up under usual conditions. As regards the measuring conditions of the "initial spray rates", the skilled person would consider as appropriate those disclosed in European standard D15 or those mentioned in the Aerosol Handbook D11. Of course he would expect that the measured values may vary from each other to some extent due to different testing conditions. In any case, the discharge rate of 0.2 g/sec given for example 3 of D13c is less than 0.3 g/sec as defined in claim 1 and thus meets the requirement of the claimed subject-matter.

4.4 As regards the percentage of ethanol in the solvent vehicle, the solvent vehicle of the product as claimed comprises any cosmetically suitable liquid including ethanol (patent in suit, paragraph [0022]), polyhydric alcohol (paragraphs [0023] and water [0025]). It is not

contested that the denaturated alcohol used in example 3 refers to ethanol (see D13c, claim 1 and page 4, 2nd full paragraph). Thus, on the basis of the definition given for the solvent vehicle in the patent in suit, the solvent vehicle in the product of example 3 of D13c consists of 20.0 ml 99% denaturated ethanol, 5.0 ml glycerol and 47.8 ml water. The percentage of ethanol in this solvent vehicle is about 27.5 % by volume. Even if the composition of the vehicle used in example 3 of D13c is recalculated in weight percent, the percentage of ethanol would be about 22.4 % by weight. Thus, the percentage of ethanol in the vehicle composition used in the product according to example 3 of D13c meets the "at least 20%" requirement of claim 1 according to the main request.

- 4.5 It remains to address the appellant's argument whether or not L-menthol is a deodorant agent.
- 4.5.1 According to the patent in suit, the deodorant agent used in the described composition may be any deodorant agent which would readily be used by the skilled person with the exclusion of short chain mono- and polyhydric alcohols such as ethanol, isopropanol and polyhydric alcohols such as propylene glycol (paragraph [0017]). Consequently, the term deodorant agent in the patent in suit must be construed broadly, covering any usual deodorant agent.
- 4.5.2 According to a standard Handbook D24, a deodorant is intended to make body odour imperceptible and various approaches can be adopted to achieve this end. For that purpose, D24 mentions under the term "deodorants", *inter alia* antiperspirants, antibacterial agents, odour

absorbers, odour maskers and well known odoriferous substances with antibacterial action such as mint oil (page 228, paragraph 8.1).

- 4.5.3 According to D25 (-)-menthol is the main component of peppermint and cornmint oil and has a characteristic peppermint odour and also exert a cooling effect (page 168). Thus, L-menthol of example 3 of D13c is a known odoriferous substance, which is a suitable deodorant agent for masking body odour (D24, paragraph 8.1).
- 4.5.4 The general definition of deodorants in D7 includes "ingredients that reduce or eliminate unpleasant odour and protect against the formation of malodour on body surfaces" (page 1740), which definition is similar to that cited in D24 above (point 4.5.2) and thus covers L-menthol as well. Furthermore, the list in D7 only covers antiperspirants, to which L-menthol does not belong.
- 4.5.5 It follows from the above that example 3 of D13c directly and unambiguously discloses all of the features defined in claim 1 of the main request, so that the claimed subject-matter cannot be distinguished from this prior art document. Consequently, the claimed subject-matter of the main request is not novel over the disclosure of D13c (Article 54 (2) EPC).
- 4.6 Since the claimed subject-matter is not novel, the question whether or not novelty would be established over other cited prior art documents, such as D3 can be left open.

1st Auxiliary Request

Amendments

5. In amended claim 1, (a) the deodorant agent **is a metal salt based on aluminium, zirconium, zinc, or mixtures thereof** and (b) **the solvent vehicle comprises ethanol.**

5.1 The first feature (a) is based on page 5, second paragraph of the application as filed. The second amended feature (b) is based on the paragraph, bridging pages 2 and 3 of the application as filed. Thus, the amendments have a basis in the application as filed and meet the requirements of Article 123(2) EPC. Since the solvent vehicle now only needs to comprise an unspecified quantity of ethanol, the problem of what a percentage refers to does not arise with this claim formulation.

5.2 Compared to claim 1 as granted both amendments restrict the scope of protection (Article 123(3) EPC). Consequently, the amendments are formally allowable.

Novelty

6. In view of the finding that the subject-matter of claim 1 according to the 1st Auxiliary Request does not involve an inventive step (see points 7. and 8. below), the question of whether or not the claimed subject-matter is novel, can be left open.

Inventive step

Closest state of the art

7. In line with the position of the opposition division and with that of all of the parties, D13c discloses the closest state of the art. The board sees no reason to take a different position as can be gathered from the following:
 - 7.1 The patent in suit relates to aerosol deodorant compositions in particular concentrated deodorant products for topical application to the skin ([paragraph 0001]). Conventional compositions have a tendency to produce a stinging sensation (paragraph [0003]) because of a relatively high content of alcohol. Further, they contain substantial quantities of volatile organic compounds, which are believed to be deleterious to the ozone layer (paragraph [0004]). Furthermore, it is desirable for consumers to have deodorant products packaged in as small a container as possible (paragraph [0006]).
 - 7.2 D13c concerns aerosol compositions, in particular antiperspirant aerosols and body perfume aerosols (page 4, fourth full paragraph), which compositions are all intended to make body odour imperceptible as defined in D24, paragraph 8.1. In particular, example 2 of D13c discloses an antiperspirant aerosol composition comprising 3.0 g aluminium chlorhydroxide, 3.0 g 1,3-butylene glycol, 39,0 ml 95% denatured alcohol, 29.0 ml purified water, 24.0 ml DME and 2.0 ml PLG. The composition is filled and pressurized in a pressure resistant container similar to that described in

example 3 of D13c (point 4.1, *supra*). The spray rate of this aerosol product is 0.4 g/sec at 25 °C.

7.3 The problems addressed in D13c concern the development of aerosol products which do not destroy the ozone layer and do not use fluorochlorocarbon gases as propellants (page 3 first full paragraph). Furthermore, the spray rate should be controlled to meet low flammability requirements, to avoid less dispersion losses to the surroundings and skin damage during spraying whilst prolonging the retention time of the effective ingredient on the skin surface (bridging paragraph pages 3 and 4).

7.4 From the above it follows that D13c addresses purposes or technical effects similar to those of the patent in suit and the compositions of D13c require a minimum of structural and functional modifications. Thus, D13c represents a suitable starting point for the purpose of assessing inventive step (Case Law, *supra*, I.D.3.2 and 3.3).

Problem and solution

8. The problem addressed in the patent in suit is to improve some or all of the disadvantages of the prior art (point 7.1 above) and to provide aerosol compositions with a similar or greater level of efficacy when compared to conventional deodorant packaged products (paragraph [0007]). The patent in suit also specifically addresses a reduced tendency of "bounce back" from the part of the body, at which it is sprayed due to the lower discharge rate, thus reducing

the "respirable fraction" of the product (paragraph [0015]).

8.1 Since example 2 of D13c already discloses the use of aluminium chloro hydroxide (metal salt of aluminium) as deodorant agent, the claimed subject-matter of the 1st auxiliary request does not differ from that described in D13c in that respect. In fact, the composition defined in claim 1 differs from that illustrated in example 2 of D13c only in the spray rate of the product, i.e. 0.4 g/sec, and in the presence of a perfume. However, D13c also discloses antiperspirant aerosols suitable for a spray rate as low as 0.1 g/sec at 25 °C (claim 1 and page 4, fourth full paragraph). According to example 3, the spray rate for a deodorant aerosol is 0.2 g/sec (point 4.1 above). Since the lower claimed discharge rate is already envisaged in deodorant aerosol products of D13c, and since there is no evidence by any comparison to D13c on file that the subject-matter of claim 1 provides an improvement over the closest state of the art in that respect, any benefits in relation to the lower spray rate (such as reduced bounce back from the skin) have not been established. A mere statement in the description with respect to an alleged advantage is not sufficient for establishing that a greater level of deodorant efficacy over that of the closest prior art exists.

8.2 According to the case law, alleged advantages to which the patent proprietor merely refers, without offering sufficient evidence to support the comparison with the closest prior art, cannot be taken into consideration in the formulation of the problem underlying the

invention and therefore in assessing inventive step (Case Law, *supra*, 5th Edition 2006, I.D.4.2).

8.3 In further support of the argument that improved deodorant efficacy has effectively been achieved, the appellant has referred to paragraph [0033] of the patent in suit. According to this paragraph, billowing and bounce back can be reduced by the use of a thickening agent. Such beneficial effects are further addressed with respect to specific synthetic cellulose derivatives as envisaged in claims 3 and 4 as granted and in paragraphs [0035] and [0036]. In particular, according to the patent in suit, the addition of a hydroxypropyl cellulose thickening agent to the aerosol composition reduces the respirable fraction of the spray (paragraph [0043]) and increases the capture efficiency of the spray (paragraph [0044]). Although those benefits are described in the patent in suit as being the result of the addition of specific thickening agents to the compositions, claim 1 of the 1st Auxiliary Request does not require any thickening agents, hence is not restricted in that respect. Therefore, these alleged advantages cannot support any improvement of the claimed compositions over those of D13c.

8.4 From the above it follows that the problem solved over example 3 of D13c, can only be seen in providing a further aerosol deodorant composition having a pleasant odour.

Obviousness

8.5 Example 3 of D13c already suggests the use of perfumes in aerosol deodorant body perfumes (see point 4.1 above). The use of fragrances in aerosol antiperspirant compositions containing aluminium chlorohydrate is known from D1 (examples 1 to 5). Thus, there is a hint in D13c itself or in D1 to modify the antiperspirant composition of example 2 of D13c by including a certain amount of perfume, as a matter of choice to provide a pleasant odour. Furthermore, claim 1 of D13c shows that the spray rate of the aerosol compositions can be as low as 0.1 g/sec. Hence, there is an incentive to pack the antiperspirant composition of example 2 of D13c in a container suitable for spraying it at a low initial discharge rate as claimed. Therefore, the subject-matter of claim 1 of the 1st auxiliary request is obvious over the cited prior art and does not involve an inventive step.

8.6 In view of the above conclusion, it is not necessary to assess inventive step by applying a different starting point, such as example 3 of D13c or a different prior art document, such as D1 or D2.

2nd Auxiliary Request

Amendments

9. Claim 1 of the 2nd Auxiliary Request is amended to specify that zinc phenol sulphonate is the deodorant agent, which is disclosed on page 5, second paragraph of the application as filed. No objections to that

amendment have been raised by the respondents. The board sees no reason to take a different position.

Inventive step

10. Claim 1 of the 2nd Auxiliary Request differs from claim 1 of the 1st Auxiliary Request 1 only in that the deodorant is zinc phenol sulphonate, which deodorant compound is not mentioned in D13c. Since it has not been shown that the use of the zinc phenol sulphonate in aerosol compositions provides any advantages over the composition of example 2 of D13c, the arguments and the conclusions drawn therefrom in respect of the 1st Auxiliary Request apply *mutatis mutandis* to the 2nd Auxiliary Request as well (see points 8.1 to 8.3 above). Thus, the problem to be solved over D13c remains the same as indicated for the 1st Auxiliary Request (providing a further aerosol deodorant composition having a pleasant odour; point 8.4 above).

D13c generally concerns antiperspirant aerosols containing any antiperspirant effective ingredient (see page 4, fourth paragraph). Zinc phenol sulfonate is a known antiperspirant agent listed in D7 (page 1741) together with aluminium chloro hydrate compounds (page 1740), which are aluminium salts similar to those used in example 2 of D13c. Thus, in line with the reasons given for the 1st Auxiliary Request, it is obvious for the skilled person aiming at the development of a further product to modify the known antiperspirant composition of example 2 of D13c by using a perfume and a low spray rate (point 8.5) and replacing the aluminium salt antiperspirant by zinc phenol sulphonate according to D7 to arrive at the

claimed subject-matter. Consequently, also the claimed subject-matter of the 2nd Auxiliary Request is not inventive.

11. Consequently, none of the requests is allowable.
12. The further question, whether or not the claimed deodorant composition having a specified discharge rate is sufficiently disclosed (Article 83 EPC), can be left open.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

C. Eickhoff

S. Perryman