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**Datasheet for the decision  
of 10 October 2019**

**Case Number:** T 2649/16 - 3.3.07

**Application Number:** 04780650.0

**Publication Number:** 1653918

**IPC:** A61K8/26, A61K8/28, A61K8/19,  
A61K8/44, A61Q15/00

**Language of the proceedings:** EN

**Title of invention:**

ENHANCED EFFICACY ANTIPERSPIRANT COMPOSITIONS CONTAINING  
STRONTIUM OR CALCIUM

**Patent Proprietor:**

The Gillette Company LLC

**Opponent:**

Unilever PLC

**Headword:**

ENHANCED EFFICACY ANTIPERSPIRANT COMPOSITIONS CONTAINING  
STRONTIUM OR CALCIUM/The gillette Company LLC

**Relevant legal provisions:**

RPBA Art. 13(1)  
EPC Art. 56

**Keyword:**

Main request - Inventive step (No)

Auxiliary request 1 not admitted into the proceedings

Auxiliary request 2 - Admitted into the proceedings

Auxiliary request 2 - Inventive step (Yes)

**Decisions cited:**

T 1360/11, T 1063/15

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0  
Fax +49 (0)89 2399-4465

Case Number: T 2649/16 - 3.3.07

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.07**  
**of 10 October 2019**

**Appellant:** Unilever PLC  
(Opponent) Colworth House, Sharnbrook  
Bedford MK44 1LQ (GB)

**Representative:** Whaley, Christopher  
Unilever Patent Group  
Colworth House  
Sharnbrook  
Bedford MK44 1LQ (GB)

**Respondent:** The Gillette Company LLC  
(Patent Proprietor) One Gillette Park  
Boston, MA 02127 (US)

**Representative:** P&G Patent Germany  
Procter & Gamble Service GmbH  
Sulzbacher Straße 40  
65824 Schwalbach am Taunus (DE)

**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 25 October 2016  
rejecting the opposition filed against European  
patent No. 1653918 pursuant to Article 101(2)  
EPC.**

**Composition of the Board:**

**Chairman** E. Duval  
**Members:** D. Boulois  
P. Schmitz

## Summary of Facts and Submissions

- I. European patent No. 1 653 918 was granted on the basis of a set of 11 claims.

Independent claim 1 as granted read as follows:

"1. An antiperspirant composition comprising a dermatologically acceptable carrier vehicle, 0.5% to 15%, by weight, of a water soluble salt selected from the group consisting of a water soluble strontium salt, a water soluble calcium salt and a mixture thereof and from 8% to 42% of an aluminum-zirconium chlorohydrate-gly antiperspirant salt having a HPLC peak 5 area of at least 33%, and 10% - 90% water wherein the antiperspirant salt and the water soluble salt are dissolved in the water."

- II. An opposition was filed under Article 100 (a) EPC against the granted patent on the grounds that the subject-matter of the patent lacked novelty and inventive step.
- III. The appeal lies from the decision of the opposition division to reject the opposition.
- IV. The documents cited during the opposition proceedings included the following  
D1: WO 2000/10512  
D2: US 6 436 381 B  
D3: US 6 375 938 B
- V. According to the decision under appeal, D1 did not explicitly disclose that the aluminium-zirconium tetrachlorohydrate-gly salt used in examples 1 and 8 had a HPLC peak 5 area of at least 33% as required by claim 1 of the contested patent. Moreover, D1 could not

implicitly disclose a salt having the required minimum peak 5 area. The subject-matter of claim 1 was therefore novel.

As regards inventive step, D2 was considered to be the closest prior art and disclosed in example 2 an antiperspirant composition containing a high peak 5 aluminium-zirconium antiperspirant salt. Claim 1 of the contested patent differed from D2 in comprising from 0.5 to 15 wt% of a water-soluble salt selected from the group of a water-soluble strontium salt, a water-soluble calcium salt and a mixture thereof. The technical problem was seen as how to provide aqueous antiperspirant compositions with superior efficacy, i.e. how to boost the efficacy of the aqueous solution of an enhanced aluminium-zirconium antiperspirant salt having a high HPLC peak 5 area. The claimed solution was not obvious in view of documents D1-D3 and the subject-matter of claim 1 of the contested patent involved an inventive step.

- VI. The opponent (hereinafter the appellant) filed an appeal against said decision. With the statement setting out the grounds of appeal, it filed the following document:  
D5: US 5 955 065
- VII. With a letter dated 10 July 2017, the patent proprietor (hereinafter the respondent) filed auxiliary requests 1 to 3 and the following documents:  
D6: Experimental Data Report  
D7: HPLC Chromatograms - Annex of the Experimental Data Report
- VIII. A communication from the Board was sent to the parties. In this it was stated in particular that the main

request was not inventive over D2 combined with D3. Moreover, claim 1 of auxiliary requests 2 and 3 did not meet the requirements of Article 123(3) EPC.

IX. With a letter dated 23 August 2019, the respondent submitted new auxiliary requests 1-5:

Independent claim 1 of auxiliary requests 1 and 2 read as follows, difference(s) compared with claim 1 as granted (i.e. main request) shown in bold:

Auxiliary request 1

"1. An antiperspirant composition comprising a dermatologically acceptable carrier vehicle, **5% to 10%**, by weight, of a water soluble salt selected from the group consisting of a water soluble strontium salt, a water soluble calcium salt and a mixture thereof and from **20% to 42%** (USP) of an aluminum-zirconium chlorohydrate-gly antiperspirant salt having a HPLC peak 5 area of at least 33%, and **25% - 75%** water wherein the antiperspirant salt and the water soluble salt are dissolved in the water."

Auxiliary request 2

"1. An antiperspirant composition comprising a dermatologically acceptable carrier vehicle, 0.5% to 15%, by weight, of a water soluble salt selected from the group consisting of a water soluble strontium salt, a water soluble calcium salt and a mixture thereof and from 8% to 42% of an aluminum-zirconium chlorohydrate-gly antiperspirant salt having a HPLC peak 5 area of at least 33%, and 10% - 90% water

wherein the antiperspirant salt and the water soluble salt are dissolved in the water; **and wherein said water soluble salt comprises a strontium salt**".

- X. Oral proceedings took place on 10 October 2019.
- XI. The arguments of the appellant, as far as relevant to the present decision may be summarised as follows:

Main request - Inventive step

Starting from D2 as closest prior art, the objective technical problem referred to by the opposition division in its decision was how to provide aqueous antiperspirant compositions with superior efficacy, i.e. how to boost the efficacy of the aqueous solution of an enhanced aluminium zirconium antiperspirant salt having a HPLC high peak 5 area.

There was clear teaching in the prior art at the priority date of the opposed patent that calcium salts enhanced the antiperspirancy performance of aluminium and aluminium-zirconium based antiperspirant salts, particularly in aqueous solution. This was clearly taught, for example, in D1 and D3. D1 and D3 indicated that inclusion of a water-soluble calcium salt "may" boost antiperspirant efficacy.

The teaching of D1 was not only that calcium salts could improve the stability of the peak 4 to 3 ratio of an Al-Zr antiperspirant salt, but also explicitly that the calcium salt enhanced the antiperspirant efficacy independent of any stabilising effect. D1 referenced many publications that correlated antiperspirancy efficacy with high HPLC peak 4 to peak 3 ratios. D1 went on to illustrate that addition of a water-soluble

calcium salt to an enhanced aluminium-zirconium tetrachlorohydrate-gly salt increased its peak 4 to peak 3 ratio (see Example 1, Table 1A of D1). So, there was a clear teaching from D1 that addition of a water-soluble calcium salt to an enhanced Al-Zr-gly antiperspirant active would increase its antiperspirancy efficacy.

D3 not only referenced the antiperspirancy boosting effect of water soluble calcium salts, it also stated that the antiperspirant salts of D2 were of enhanced efficacy and that enhanced efficacy aluminium-zirconium salts were preferred in compositions of the invention.

In D5, the message that water-soluble calcium salts could further increase the antiperspirant efficacy of enhanced efficacy aluminium-zirconium salts was also very clear (see claims 18 to 20).

The addition of a calcium salt could therefore not be inventive.

#### Admission of auxiliary request 1 into the proceedings

Claim 1 of auxiliary request 1 concerned a different type of product, namely a composition used to formulate topical antiperspirant compositions and not a antiperspirant composition anymore. The discussion as to inventive step was not the same as for the main request.

#### Auxiliary request 2

The appellant had no objections against auxiliary request 2.



XII. The arguments of the respondent, as far as relevant to the present decision, may be summarised as follows:

Main request - Inventive step

Document D2 was the closest prior art because it is related to a problem similar to the opposed patent. D1 did not mention any enhanced efficacy aluminum-zirconium antiperspirant salt exhibiting a HPLC peak 5 area of at least 33% or more and could not be the closest prior art.

The problem underlying the patent in suit in the light of document D2 was to increase the antiperspirant efficacy better than it is currently obtained with an enhanced efficacy aluminum-zirconium antiperspirant salt exhibiting a HPLC peak 5 area of at least 33% or more (par. [0009] of the opposed Patent).

As a solution to this technical problem, the patent in suit embraced enhanced efficacy antiperspirant compositions comprising a dermatologically acceptable carrier vehicle, an aluminum-zirconium chlorohydrate-gly antiperspirant salt having an HPLC peak 5 area of at least 33%, and a water-soluble salt selected from the group consisting of a water-soluble strontium salt and/or water soluble calcium salt.

It had been found that the inclusion of a strontium salt and/or a calcium salt could help to boost the antiperspirant efficacy of a high peak 5 antiperspirant salt. Data had been provided in example 1 of the patent in suit to support this technical effect. A 12% improvement in thermal efficacy versus the control had been obtained when a water-soluble strontium salt such as strontium nitrate was added to an antiperspirant

composition comprising the high peak 5 antiperspirant salt.

Additional data D6 had been generated to understand how a strontium salt or a calcium salt can help to boost the efficacy of a high peak 5 antiperspirant salt in an aqueous antiperspirant composition by increasing significantly the area of peak 5. Indeed, the HPLC data indicated that the area of peak 5 of the enhanced antiperspirant high peak 5 antiperspirant salt was significantly increased when adding a water-soluble calcium or strontium salt in aqueous solution at room temperature, while stabilizing the HPLC 4:3 peak ratio.

There was no teaching in document D2 how to enhance the efficacy of the aqueous solution of the specific enhanced aluminum-zirconium antiperspirant salt having a HPLC peak 5 area.

There was also no teaching in document D1 that the addition of a water-soluble calcium salt would improve the efficacy for the specific enhanced aluminum-zirconium antiperspirant salt having a HPLC peak 5 area.

Whilst document D3 indicated that inclusion of a water-soluble calcium salt might boost antiperspirant efficacy, the skilled person did not get the specific teaching that a water-soluble calcium salt may boost antiperspirant efficacy of the specific antiperspirant salts having the high HPLC peak 5 area in an aqueous solution.

Document D5 was not concerned with the specific antiperspirant salts having the high HPLC peak 5 area, and was therefore even less pertinent than document D1.

Hence, there was no teaching and guidance how to improve the efficacy of the particular type of antiperspirant salt employed in document D2 already well stabilized in an aqueous solution. For all of the above reasons, the subject-matter of the claims of the main request involved an inventive step.

Admission of auxiliary request 1 into the proceedings

This request was filed in response to the Board's communication, and the amendments came from claim 2 as granted. It was filed in particular in view of the tests D6 which showed that calcium salts at the claimed concentration showed a technical effect.

Auxiliary request 2 - Inventive step

There was no prior art which mentioned the use of a strontium salt to enhance the efficacy of the E<sup>5</sup>AZCH-Gly antiperspirant, and the claimed subject-matter was inventive.

XIII. Requests

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

The respondent requests that the appeal be dismissed, alternatively that the decision under appeal be set aside and the patent be maintained according to the sets of claims filed as auxiliary requests 1-5 with letter of 23 August 2019.

## Reasons for the Decision

### 1. Main request (claims as granted) - Inventive step

1.1 The invention relates to enhanced efficacy antiperspirant compositions of aluminium-zirconium chlorohydrate-gly having a HPLC peak 5 area of at least 33% comprising a strontium and/or a calcium salt.

1.2 D2 was considered as the closest prior art by the opposition division in its decision.

It discloses antiperspirant compositions comprising an aluminium-zirconium salt having a HPLC peak 5 area of at least 33% with water, in particular the antiperspirant E<sup>5</sup>AZCH-Gly, i.e. the aluminium zirconium tetra chlorohydrate glycine salt (see D2, col. 3, l. 35-64, example 2 and Table 2; claim 15). This document does not disclose the presence of a calcium or strontium salt.

1.2.1 D1 discloses compositions comprising Al-Zr tetrachlorohydrate-Gly antiperspirant stabilized with a calcium salt in aqueous solutions (see D1, examples 1 and 8). This document does not disclose an aluminium zirconium tetrachlorohydrate-gly having a HPLC peak 5 area of at least 33%, but relates to antiperspirant salts having a particular HPLC peak 4 to peak 3 ratio.

1.2.2 D3 discloses anhydrous compositions comprising antiperspirant salts, such as those of claim 1 of the main request, in low molecular weight polyethylene glycol. Said document mentions that the compositions disclosed therein may optionally include a water soluble calcium salt, such as calcium chloride to boost

the antiperspirant efficacy; reference is made to D5 with this regard (see col. 4, l. 20-30, 50-53). This document does therefore not disclose the presence of water in the compositions.

- 1.2.3 In view of the number of features in common with the claimed invention, the Board shares the opposition division's view that D2 is the closest prior art.
- 1.3 The problem to be solved is the one also considered by the opposition division, namely to provide aqueous antiperspirant compositions with superior efficacy, i.e. how to boost the efficacy of the aqueous solution of an enhanced aluminium zirconium antiperspirant salt having a HPLC high peak 5 area.
- 1.4 Assuming that this problem is solved, claim 1 of the main request proposes as the solution the addition of 0.5% to 15%, by weight, of a water soluble salt selected from the group consisting of a water soluble strontium salt, a water soluble calcium salt and a mixture thereof.
- 1.5 This solution, in particular the specific incorporation of 0.5% to 15% by weight of calcium salt is however obvious in view of D3.
  - 1.5.1 D3 relates indeed at least partially to the specific E<sup>5</sup>AZCH-Gly, which is presented as a new type of aluminium-zirconium antiperspirant by reference to D2 (see D3, col 4. 120-30, col. 3, l. 52-55). D3 further discloses that compositions will preferably contain 18 to 25% by weight of said enhanced efficacy antiperspirant (see D3, col. 4, l 31-49), and mentions explicitly that the compositions comprising said enhanced efficiency antiperspirant may optionally

include a water-soluble calcium salt, such as calcium chloride in a concentration comprised between 3 to 15 % by weight (see D3, col. 4, l. 50-58). This passage specifies that the inclusion of a water soluble salt may boost the antiperspirant efficacy. The effect of a calcium salt on the efficacy of E<sup>5</sup>AZCH-Gly was therefore known from D3.

Hence, in view of the disclosure of D3, the provision of an aqueous composition of an aluminium zirconium antiperspirant salt having a HPLC high peak 5 area with superior efficacy, i.e. with a boosted efficacy, at least as regards the addition of 1-12% by weight of a calcium salt is obvious.

- 1.5.2 The Board could in particular not follow the respondent's argument that the solution was not predictable, because the skilled person would not have added a calcium salt to boost the efficacy of a high peak 5 antiperspirant salt in an aqueous antiperspirant composition by specifically increasing significantly the HPLC peak 5 area of said high peak 5 antiperspirant salt. According to the respondent, since D3 did not indicate specifically that the inclusion of a water soluble calcium salt can increase significantly the area of the HPLC peak 5 of E5AZCH-Gly salt in an aqueous-antiperspirant composition, the solution was not obvious.

The description of the contested patent merely states that the inclusion of a strontium salt and/or a calcium salt boosts the efficacy of a high peak 5 antiperspirant salt (see the specification par. [0010]). There is neither any explanation in the contested patent as to the mechanism of action involved in the efficacy boost, nor any disclosure, whether

explicit or implicit, that the efficacy boost of a aluminum-zirconium chlorohydrate-gly antiperspirant salt having a HPLC peak 5 area of at least 33%, is specifically linked with an increased HPLC peak 5 area. Said increase of HPLC peak 5 area was also never brought forward during the proceedings before the opposition division.

The assessment of inventive step is to be made at the effective date of the patent on the basis of the information in the patent or derivable therefrom together with the common general knowledge then available to the skilled person. Example 1 of the patent only refers to a greater thermal efficacy, there is no mention in example 1 or in the remaining part of the contested patent that the HPLC peak 5 is increased, nor is any relationship established between this increase and the boost in efficacy. The respondent cannot therefore rely on an effect only established later and which has no basis in the application or is not derivable from the technical teaching of the application as filed.

The link between an increase of efficacy and an increase of the peak 5 area was also not known from other documents. The respondent's reference to D2 to prove that it was known that the efficacy of the antiperspirant was linked with the peak 5 content is also irrelevant to this point (see D2, col. 1, l. 51-62 and col. 3, l. 35-64). The cited passages just remind that the antiperspirants having a higher peak 5 content, typically greater than 33%, have an enhanced antiperspirant efficacy; this document does not specify that the peak 5 area of such antiperspirant can be increased by the addition of another compound, such as a salt.

- 1.5.3 Consequently, the subject-matter of claim 1 of the main request is obvious over the teaching of D2 combined with the teaching of D3.

The main request does not meet the requirements of Article 56 EPC.

2. Auxiliary request 1 - Admission into the proceedings

- 2.1 This request has been filed after the issue of the Board's communication in reply to the Board's opinion that auxiliary requests 1 and 2 violated the requirements of Article 123(3) EPC. The admission and examination of any request filed at this stage is left to the Board's discretion (Article 13 RPBA).

- 2.2 The subject-matter of claim 1 of auxiliary request 1 has been amended by the specification of the amounts of the water-soluble salt, the antiperspirant and water.

The specific restriction to an amount of **"20% to 42% (USP) of an aluminum-zirconium chlorohydrate-gly antiperspirant salt having a HPLC peak 5 area of at least 33%"** was not present in any of the auxiliary requests 1-3 filed in reply to the statement of grounds of appeal. Auxiliary request 1 does therefore not correspond to any request previously on file.

Moreover, said amendments brought with regard to the amount of aluminum-zirconium chlorohydrate-gly antiperspirant salt, does not address the Board's objections raised pursuant Article 123(3) EPC, since said objections related to the restriction to the strontium salt as unique water-soluble salt in claim 1 of auxiliary requests 2 and 3 filed previously.



It appears therefore that auxiliary request 1 can not be seen as a reaction to the objections raised pursuant Article 123(3) EPC.

2.2.1 Moreover, the restriction to 20-42% of the amounts of antiperspirant opens also a new discussion as regards inventive step, at a late stage of the proceedings. As argued by the appellant by reference to the description of the contested patent (see par. [0024]), such compositions are not anymore directed to antiperspirant compositions, but to pre-formulations used to formulate topical antiperspirant compositions such as aqueous solutions, aqueous-alcoholic solutions and water-in-oil emulsions. This restriction would open a new discussion as regards inventive step at a late stage of the proceedings.

2.3 Consequently, admitting such request would be contrary to the principle of procedural economy. Hence, the Board finds it appropriate to exercise its discretion by not admitting auxiliary request 1 into the proceedings (Article 13(1) RPBA).

3. Auxiliary request 2 - Admission into the proceedings

The subject-matter of claim 1 of auxiliary request 2 corresponds to the subject-matter of claim 1 of previous auxiliary request 2 filed in reply to the statement of grounds of appeal, reformulated with the specification "wherein said water soluble salt comprise a strontium salt".

This amendment is a direct response to the objections made for the first time by the Board in its communication, and overcomes the objections under

Article 123(3) EPC raised against previous auxiliary requests 2 and 3.

Consequently, the Board finds it appropriate to exercise its discretion by admitting auxiliary request 2 into the proceedings (Article 13(1) RPBA).

4. Auxiliary request 2 - Amendments

The request meets the requirements of Article 123(3) EPC (cf. decisions T 1360/11 and T 1063/15).

5. Auxiliary request 2 - Inventive step

5.1 The invention now relates to enhanced efficacy antiperspirant compositions of aluminium-zirconium chlorohydrate-gly having a HPLC peak 5 area of at least 33% (E<sup>5</sup>AZCH-Gly) and comprising specifically a strontium salt.

5.2 D2 remains the closest prior art (cf. point 1.2 above).

5.3 The problem to be solved remains the provision of aqueous antiperspirant compositions with superior efficacy, i.e. how to boost the efficacy of the aqueous solution of an enhanced aluminium zirconium antiperspirant salt having a HPLC high peak 5 area.

5.4 As a solution to this problem, claim 1 of the main request proposes the addition of 0.5% to 15%, by weight, of a salt comprising a water soluble strontium salt.

5.5 Example 1 of the contested patent shows convincingly that strontium salts provide indeed an improved efficacy effect. The antiperspirant composition

comprising a strontium salt provided a 12% improvement in thermal efficacy versus a control formulation. Consequently, there is sufficient evidence supporting the alleged effect.

There is no cited document disclosing or suggesting the addition of a strontium salt to a composition comprising an enhanced aluminium zirconium antiperspirant salt having a HPLC high peak 5 area, even less in the context of the posed problem.

The claimed solution is therefore not obvious, and auxiliary request 2 meets the requirements of Article 56 EPC.

## **Order**

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the set of claims of auxiliary request 2 and a description to be adapted.

The Registrar:

The Chairman:



B. Atienza Vivancos

E. Duval

Decision electronically authenticated