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Datasheet for the decision of 1 July 2025

Case Number: T 1786/23 - 3.3.02

Application Number: 19185690.5

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Language of the proceedings: EN

Title of invention:
ARTHROPODA REPELLENT COMPOSITION

Patent Proprietor:
SanderStrothmann GmbH

Opponent:
DAKEM

Headword:

Relevant legal provisions:
EPC Art. 56, 54, 83, 84, 123(2), 123(3)
RPBA 2020 Art. 13(1)

Keyword:
Amendment to appeal case
Claims - clarity
Amendments
Extension of scope
Sufficiency of disclosure
Novelty
Inventive step

Decisions cited:
G 0003/14

Catchword:

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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

Case Number: T 1786/23 - 3.3.02

D E C I S I O N
of Technical Board of Appeal 3.3.02
of 1 July 2025

Appellant: (Opponent)	DAKEM 69, rue Victor Hugo 92400 Courbevoie (FR)
Representative:	Ipsilon 11 rue Saint-Georges 75009 Paris (FR)
Respondent: (Patent Proprietor)	SanderStrothmann GmbH Brüsseler Straße 2 49124 Georgsmarienhütte (DE)
Representative:	f & e patent Braunsberger Feld 29 51429 Bergisch Gladbach (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 9 August 2023 concerning maintenance of the European Patent No. 3763212 in amended form.**

Composition of the Board:

Chairman	M. O. Müller
Members:	S. Bertrand
	M. Blasi

Summary of Facts and Submissions

I. The appeal by the opponent ("appellant") is against the opposition division's interlocutory decision that European patent No. 3 763 212 as amended in the form of the main request, comprising the set of claims filed on 17 May 2023, met the requirements of the EPC.

II. The patent is concerned with the provision of an Arthropoda repellent composition providing long-term protection. Arthropoda comprises insecta, arachnida and myriapoda species.

III. The following documents are referred to in the present decision:

D2	BR 102016004354-9 A2
D3	WO 2017/143421 A1
D12	S. Songkro *et al.*, Journal of Medical Entomology 49(3) 2012, 672-7
D17	Summary of experimental data provided by the patent proprietor on 17 May 2023
A18	Comparative data "SIMULATED-USE TRIAL OF MOSQUITO REPELLENT PRODUCTS"
A19	WHO Guidelines for Efficacy Testing of Mosquito Repellents for Human Skin
A20	ECHA Guidance on the Biocidal Products Regulation, Volume II Parts B+C Version 4.1, February 2022
A21	Extract from the internet, PTA nowadays, "Wie beugt man Mückenstichen effektiv vor?"
A22	Extract from the internet, Frankfurter Rundschau, "Es stechen nur die Weibchen"

A23 Extract from the internet, Tierlexikon, "Stechmücke"

IV. In the impugned decision, the opposition division's conclusions included that the claims of the main request met the requirements of Articles 83, 84 and 123(2) and (3) EPC. The subject-matter of the claims of the main request was novel in view of either of D2 and D3 and involved an inventive step in view of any of D2, D3 and D12.

V. In its statement of grounds of appeal and a further letter dated 1 July 2024, the appellant contested the opposition division's decision. It objected to the allowability of the main request considered by the opposition division in its decision. It furthermore submitted an experimental report A18 and documents A19 and A20.

VI. In the reply to the grounds of appeal, the patent proprietor ("respondent") disputed the appellant's submissions. It resubmitted the sets of claims of auxiliary requests 1 to 23 filed before the opposition division and filed documents A21 to A23. In a further letter dated 30 October 2024, it filed sets of claims according to auxiliary requests 24 to 47.

VII. The board summoned the parties to oral proceedings as per their requests and issued a communication under Article 15(1) RPBA. In this communication, the board expressed the preliminary opinion that the main request and auxiliary requests 1 to 23 were not allowable.

VIII. In a subsequent letter, the respondent provided further submissions on the allowability of auxiliary requests 24 to 47.

IX. Oral proceedings before the board were held by videoconference on 1 July 2025 in the presence of both parties. During the oral proceedings, the respondent withdrew the main request and auxiliary requests 1 to 23. It made auxiliary request 24 its main request.

X. The parties' requests relevant to this decision were as follows.

The appellant requested that the decision under appeal be set aside and the patent be revoked in its entirety.

The respondent requested that the decision under appeal be set aside and the patent be maintained in amended form based on the set of claims of the main request, filed as auxiliary request 24 with the letter dated 30 October 2024.

XI. The arguments of both the appellant and respondent relevant to the present decision are summarised below.

Reasons for the Decision

Main request filed as auxiliary request 24

1. Admittance of the main request filed as auxiliary request 24 - Article 13(1) RPBA

1.1 The claims of the main request filed as auxiliary request 24 ("current main request") are identical to the claims of the previous main request (considered allowable by the opposition division), except that claim 4 of the current main request has been amended in that the term "said polyols" has been replaced by the term "polyols (iii)" as follows:

"*wherein the total amount of ~~said~~ polyols **(iii)** in the composition ranges from 0,2 wt.-% to 20 wt.%*"

1.2 The current main request was filed by the respondent with the letter submitted on 30 October 2024, after it had filed the reply to the grounds of appeal and before the board's communication under Article 15(1) RPBA. Consequently, Article 13(1) RPBA applies to the admittance of the current main request into the proceedings.

1.3 Under Article 13(1) RPBA, any amendment to a party's appeal case after it has filed its reply to the grounds of appeal is subject to the party's justification for its amendment and may be admitted only at the discretion of the board.

The board exercises its discretion in view of, *inter alia*, the current state of the proceedings, the suitability of the amendment to resolve the issues which were admissibly raised by another party in the appeal proceedings or which were raised by the board, whether the amendment is detrimental to procedural economy, and, in the case of an amendment to a patent application or patent, whether the party has demonstrated that any such amendment, *prima facie*, overcomes the issues raised by another party in the appeal proceedings or by the board and does not give rise to new objections.

1.4 The respondent argued that the current main request was submitted in response to the appellant's objection of added subject-matter in claim 4 of the previous main request, raised by the appellant with the letter of 1 July 2024.

1.5 The board finds the respondent's submission convincing for the following reasons.

The board acknowledges that the appellant submitted that claim 4 of the previous main request could add subject-matter with its statement of grounds of appeal (fourth paragraph of page 8). However, this was done in a section not related to added subject-matter but lack of clarity (heading "II- LACK OF CLARITY ARISING FROM AMENDMENTS DURING THE OPPOSITION PROCEEDINGS (MAIN REQUEST)" on the top of page 5 of the statement of grounds of appeal).

Furthermore, the appellant merely submitted that the interpretation of the expression "further polyols" in claim 4 of the previous main request could lead to an objection of added subject-matter (fourth paragraph of page 8 of the statement of grounds of appeal). This submission does not clearly identify the reasons why and how the interpretation of the expression "further polyols" would lead to an objection of added subject-matter. Thus, this objection, if any, is unsubstantiated.

In the letter of 1 July 2024, the appellant submitted that "the total amount of said polyols in the composition" in claim 4 of the previous main request did not encompass the amount of PPG-20 methyl glucose, contrary to claim 6 as filed. Thus, in this letter, the appellant identified for the first time the feature which in its opinion added subject-matter in claim 4 of the previous main request, namely the total amount of the polyols in the composition and the reasons why this added subject-matter, namely that compared to claim 6 as filed, the total amount had a different definition since it did not encompass the amount of PG-20 methyl glucose ether. Thus, the objection of added subject-matter in claim 4 of the previous main request was

substantiated for the first time with the letter of 1 July 2024.

Therefore, the appellant's objection in the letter of 1 July 2024 can be seen as a justification for the respondent to file the current main request in its letter of 30 October 2024 as an attempt to overcome the objection raised. This was not disputed by the appellant.

1.6 For these reasons, the board decided to admit the current main request into the proceedings pursuant to Article 13(1) RPBA.

2. As stated in the board's communication pursuant to Article 15(1) RPBA, the objections under Articles 123(2) and (3) and 84 EPC raised by the appellant against the claims of the previous main request apply to the claims of the then auxiliary request 24, i.e. the current main request. This is why these objections are dealt with below in the context of the current main request.

3. Added subject-matter - Article 123(2) EPC

3.1 Claim 1

Claim 1 of the current main request reads as follows:

"*1. An Arthropoda repellent composition, comprising*

(i) Icaridin (1 -(1 -methylpropoxycarbonyl)-2-(2-hydroxyethyl)piperidine,

(ii) optionally at least one further Arthropoda repellent compound selected from PMD (para-menthan-3,8-diol), DEET (N,N-diethyl-mmethylbenzamide), IR 3535 (ethyl-3-acetylbutylaminopropanoate), KBR 3023 ((RS)-sec-butyl-(RS)-2-(2hydroxyethyl) piperidine-1-

Carboxylate) or ethyl antranilate (ethyl-2-aminobenzoate), and

(iii) ***at least PPG-20 methyl glucose ether in an amount of from 0,1 wt.% to 1,5 wt.% referring to the weight of the total composition and optionally*** *at least one* ***further*** *polyol, selected from ~~PPG-20 methyl glucose ether,~~ PPG-10 methyl glucose ether, propylene glycol, butylene glycol and pentylene glycol*" (Emphasis added by the board; strike through and bold text representing deletion and addition respectively compared to claim 1 as filed.)

In the following, PPG-20 methyl glucose ether is referred to as Glucam P20.

The appellant submitted that claim 1 of the current main request added subject-matter.

The board does not agree.

As shown above, claim 1 of the current main request essentially differs from claim 1 as filed by the feature that the composition comprises at least Glucam P20 in an amount of from 0.1 to 1.5 wt.% referring to the weight of the total composition.

As submitted by the respondent, this feature is disclosed in claim 8 as filed ("*comprising PPG-20 methyl glucose ether in an amount of from 0,1 wt.% to 1,5 wt.%, [...], referring to the weight of the total composition*"). As a consequential amendment of adding this feature of claim 8 as filed, claim 1 of the current main request has been adapted by inserting the terms "optionally" and "further" to indicate that the further polyols, in contrast to the now mandatory Glucam P20, remain optional.

Thus, claim 1 of the current main request is based on the combination of claims 1 and 8 as filed.

3.2 Claims 3 and 5 to 11

The appellant objected that claims 3 and 5 to 11 of the current main request added subject-matter.

The board does not agree. Claims 3 and 5 to 11 of the current main request are based on claims 5 and 7 to 13 as filed, respectively. Contrary to the appellant's submission, claims 3 and 5 to 11 of the current main request define subject-matter which does not require a selection from additional paragraphs of the description of the application as filed or a selection of claims as filed, apart from those providing a basis as indicated above.

3.3 Thus, the claims of the current main request meet the requirement of Article 123(2) EPC.

4. Extension of scope of protection - claim 4 - Article 123(3) EPC

4.1 The appellant submitted that the range of the total amount of polyols (iii) in claim 4 of the current main request was broader than the range of the total amount in claim 4 as granted. The scope of protection conferred by the patent had thus been extended, contrary to the requirements of Article 123(3) EPC.

4.2 The board disagrees.

The polyols (iii) in claim 4 of the current main request encompass the same polyols as those in claim 4 as granted, namely the polyols defined in claim 1 or 2 of the current main request (Glucam P20, PPG-10 methyl

glucose ether, propylene glycol, butylene glycol and pentylene glycol).

The range of the total amount of polyols (iii) in claim 4 of the current main request, i.e. from 0.2 to 20 wt.%, is identical to that of claim 4 as granted. Since the polyols (iii) and the amount of polyols (iii) are identical in both claim 4 of the current main request and claim 4 as granted, the protection conferred by the patent is not extended due to this amendment (Article 123(3) EPC).

5. Clarity - Article 84 EPC

5.1 The appellant raised objections of lack of clarity against claims 4 and 6 of the current main request.

5.2 Claim 4

Claim 4 of the current main request comprises the term "further polyols" ("*wherein each of the further polyols (iii) independently are present in the composition*"). This term was not present in granted claim 4 and is thus open to an assessment of clarity under Article 84 EPC (G 3/14; OJ EPO 2015, A102, order).

The appellant submitted that the term "further polyols" in claim 4 of the current main request could refer to all polyols in the claimed composition; to at least one polyol as defined in claim 1 of the current main request, besides Glucam P20; or to all the previously optional polyols recited in claim 1, which were hence not optional anymore.

The board does not agree. Claims 1 and 2 of the current main request contain the term "at least further polyol" followed by a list of polyols in its section (iii). The term "the further polyols (iii)" in claim 4 of the

current main request cannot but refer to these further polyols mentioned under item (iii) in claim 1 or 2 of the current main request, namely PPG-10 methyl glucose ether, propylene glycol, butylene glycol and pentylene glycol.

There is thus, contrary to the appellant's submission, no ambiguity of the term "the further polyols (iii)" in claim 4 of the current main request.

5.3 Claim 6

The appellant submitted that claim 6 of the current main request introduced redundancy owing to its reference towards claim 1.

Claim 6 of the current main request requires that the Arthropoda repellent composition comprise Glucam P20 in an amount of from 0.2 to 1 wt.%, preferably from 0.25 to 0.8 wt.%, more preferred 0.3 to 0.7 wt.% and most preferred 0.4 to 0.6 wt.% referring to the weight of the total composition. Compared to claim 6 as granted, claim 6 of auxiliary request 24 was amended in that the range from 0.1 to 1.5 wt.% was deleted.

The remaining features of claim 6 of the current main request were present in claim 6 as granted. Thus, claim 6 of the current main request is not open to an assessment of clarity under Article 84 EPC, in line with decision G 3/14. Hence, the appellant's objection against claim 6 of the current main request must fail.

5.4 In view of the above, claims 4 and 6 of the current main request meet the requirements of Article 84 EPC.

6. Novelty - claim 1 - Article 54(2) EPC

6.1 The appellant raised two objections of lack of novelty, namely that the subject-matter of claim 1 of the current main request lacked novelty in view of each of D2 and D3.

6.2 Novelty in view of D2 and D3

6.2.1 D2 relates to repellent compositions comprising a repellent compound contained in a release nanometric system (claim 1 of D2).

The appellant relied on example 5 of D2.

Example 5 of D2 discloses a composition comprising 1 wt.% of Glucam P20 (polyol (iii) required by claim 1 of the current main request).

The composition of example 5 of D2 does not comprise Icaridin, i.e. compound (i) of claim 1 of the current main request.

6.2.2 D3 relates to a topical repellent and/or cosmetic composition characterised by comprising a cosmetic and/or repellent active contained in a release nanometric system (claim 1 of D3).

The appellant relied on example 10 of D3.

Example 10 of D3 discloses a base cream composition comprising 1.00 to 2.00 wt.% Glucam P20 (polyol (iii) required by claim 1 of the current main request).

The composition of example 10 of D3 does not comprise Icaridin, i.e. compound (i) of claim 1 of the current main request.

6.2.3 Thus, example 5 of D2 and example 10 of D3 do not directly and unambiguously disclose a composition according to claim 1 of the current main request.

The appellant submitted that in view of the disclosure of Icaridin on page 11 of D2 and pages 13 and 14 of D3, the skilled person would have added Icaridin to the base cream of example 5 of D2 and example 10 of D3.

The board does not agree. There is no direct and unambiguous disclosure in D2 or D3 that the Icaridin disclosed in those documents has to be added to the compositions of the respective examples. What the skilled person would have done is a question of inventive step rather than novelty.

Thus, the subject-matter of claim 1 of the current main request is novel in view of the disclosure of each of D2 and D3.

7. Inventive step - admittance of A18 to A23

7.1 In its written submissions, the appellant relied on documents A18 to A20 for its objection against the inventive step of the claimed subject-matter. The respondent relied on documents A21 to A23 in its defence in the event that document A18 was admitted.

7.2 A18 comprises experimental data on an insecticidal effect (protection time against mosquito bites) using one comparative repellent spray composition comprising Icaridin and one repellent spray composition comprising Icaridin, PMD (para-menthan-3,8-diol) and Glucam P20. Icaridin, PMD and Glucam P20 are compounds (i) to (iii) of the Arthropoda repellent composition as defined in claims 1 and 2 of the current main request.

A19 and A20 are mentioned on page 4 of A18 (under the heading "3. MATERIALS AND METHOD"). A19 and A20 are experimental guidelines for testing mosquito repellents on human skin.

A21 to A23 are three disclosures referring to the blood suction behaviour of female mosquitoes.

As set out above, A18 to A20 were first submitted by the appellant with the statement of grounds of appeal, and A21 to A23 were submitted by the respondent with the reply to the grounds of appeal, hence they represent amendments within the meaning of Article 12(4) RPBA.

7.3 The respondent requested that A18 to A20 not be admitted into the appeal proceedings.

The respondent also requested that A21 to A23 be admitted into the appeal proceedings should A18 be admitted into the appeal proceedings.

7.4 Pursuant to Article 12(6), second sentence, RPBA, the board does not admit requests, facts, objections or evidence which should have been submitted in the proceedings leading to the decision under appeal, unless the circumstances of the appeal case justify their admittance.

7.5 The appellant submitted that A18 was filed in reply to the impugned decision and the experimental data contained in document D17. Document D17 had been filed by the respondent on 17 May 2023, two months prior to the oral proceedings before the opposition division. A18 contained experimental tests which were carried out to counter the experimental data supplied in D17. In

view of the late filing of D17, it was not possible for the appellant to submit A18 earlier.

7.6 The board disagrees with the appellant.

First, the appellant's submission that A18 was filed in reply to the impugned decision is a submission made only in general terms. Indeed, the appellant did not refer to any specific part of the decision which in its opinion justified its submission of A18 (and the related documents A19 and A20), and the board sees none. In the absence of any specific passage in the decision, it cannot be held that the decision in general justifies the submission of A18 to A20.

With regard to the second argument that A18 was filed in reply to the experimental data contained in document D17, the board notes the following.

Table 1 of A18 contains two examples, one comprising 20% Icaridin and one comprising 20% Icaridin, 10% PMD and 0.4% Glucam P20

D17 comprises two tables, namely tables 1 and 2.

Table 1 of D17 comprises experimental data from the patent, namely examples V1 to V7, E1 and E2 (footnote 1 under table 1).

Table 2 of D17 comprises new experimental data carried out in March 2023 (bottom of page 2 of D17).

The first example of table 1 of A18 is identical to example V7 of table 1 of D17, and the second example of table 1 of A18 is very similar to example E2 of table 1 of D17, it only differs in the amount of Glucam P20 (0.4% in A18 and 0.5% in E2). Thus, as submitted by the respondent, and not contested by the appellant, the experimental data of A18 are replicates of experimental

data of D17 (examples V7 and E2) which are contained in the patent. Thus, A18 concerns and, if anything, is a response to the experimental data of the patent as replicated in D17, and not to the new experimental data contained in table 2 of D17 and carried out in March 2023.

The appellant could have challenged the data contained in the patent (and reiterated in D17) by filing A18 and the related documents A19 and A20 in its notice of opposition and, if not then, at the latest in reply to the respondent's reply to the notice of opposition. The appellant did not provide any reason why it was not possible to do so, and the board sees none.

It follows that A18 to A20 should have been submitted during the proceedings before the opposition division.

7.7 The board thus decided not to admit documents A18 to A20 pursuant to Article 12(4) and (6) RPBA. Since the respondent's request that A21 to A23 be admitted was conditional on the admittance of A18 into the proceedings, the board also decided not to admit A21 to A23 into the proceedings.

8. Inventive step starting from D2 - claim 1 - Article 56 EPC

8.1 The appellant raised a first objection of lack of inventive step of the subject-matter of claim 1 of the current main request starting from the formulation disclosed in table 1 of D2.

8.2 The formulation disclosed in table 1 of D2 comprises Icaridin and Glucam P20, i.e. ingredients (i) and (iii) as defined in claim 1 of the current main request. Table 1 of D2 does not disclose the amount of Glucam

P20 in the formulation. It was common ground between the parties that the formulation disclosed in table 1 of D2 could be taken as the starting point for the assessment of the inventive step of the subject-matter of claim 1 of the current main request.

8.3 Distinguishing feature

It was also common ground between the parties that the distinguishing feature of claim 1 of the current main request in view of the above disclosure of D2 is the amount of Glucam P20, being 0.1 to 1.5 wt.% referring to the weight of the total composition.

8.4 Technical effect and objective technical problem

The appellant submitted that no technical effect was achieved by the distinguishing feature and, for that reason, the objective technical problem was only the provision of an alternative.

The board does not agree.

D17 contains two tables, namely tables 1 and 2, comprising experimental data on the protection time against mosquito bites.

In table 1 of the patent (and the application as filed) and D17, V6 is a repellent composition comprising only 10% Icaridin. Since it does not comprise the claimed compound (iii) Glucam P20, V6 is a comparative example. This composition has a time before the first mosquito bite of 2.83±0.24 hours.

In the same table, E1 is a repellent composition comprising 10% Icaridin, i.e. the same amount as in example V6, and 0.5% Glucam P20. E1 is thus a composition according to claim 1 of the current main

request. This composition has a time before the first mosquito bite of 4.5±2.68 hours.

As submitted by the respondent, table 1 shows that adding 0.5% Glucam P20, i.e. an amount within the range as defined in claim 1 of the current main request, increases the time before the first mosquito bite from 2.83±0.24 hours (V6) to 4.5±2.68 hours (E1).

In table 2 of D17, V13 is a repellent composition comprising only 10% Icaridin. Since it does not comprise Glucam P20, V13 is a comparative example. This composition has a time before the first bite of 0.25±0.24 hours.

In the same table, E7 and E8 are repellent compositions comprising 10% Icaridin, i.e. the same amount as in example V13, and 0.5 (E7) or 1.5% (E8) Glucam P20. E7 and E8 are thus compositions according to claim 1 of the current main request. These compositions have a time before the first mosquito bite of 2.33±0.47 and 1.33±0.85 hours.

Table 2 therefore shows that adding 0.5% Glucam P20 (E7) increases the time before the first mosquito bite from 0.25±0.24 hours (V13, no Glucam P20) to 2.33±0.47 hours (E7). When increasing the Glucam P20 amount further to the upper limit of the claimed range (1.5 wt.% (E8)), this time decreases to 1.33±0.85 hours but still stays above the value obtained without Glucam P20 (V13).

As submitted by the respondent, the results of E7, E8 and V13 thus show the same as the results in table 1, namely that adding Glucam P20 in the claimed amount increases the time before the first mosquito bite relative to the time without any Glucam P20. Furthermore, as equally submitted by the respondent,

the fact that the time until the first mosquito bite decreases between 0.5 (E7) and 1.5 wt.% (E8) Glucam P20 suggests that increasing the amount of Glucam P20 to more than 1.5 wt.%, i.e. to a value outside the claimed range, would lead to a further reduction in the time before the first mosquito.

It follows that the distinguishing feature of claim 1 of the current main request, i.e. the amount of Glucam P20 being between 0.1 to 1.5 wt.%, results in a longer protection time.

The appellant argued that the value of the time before the first mosquito bite of V13 in table 2 of D17 for a test without any Glucam P20 was surprising since it did not correspond to the values found in the patent and table 1 of D17 for another test without Glucam P20 (V6). This called into question the validity of the other experimental data provided by table 2 of D17.

The board does not agree.

It is acknowledged that in V13 a repellent composition comprising only 10% Icaridin and no Glucam P20 exhibits a lower time before the first mosquito bite (0.25±0.24 hours) than that of V6 (2.83±0.24 hours), also comprising only 10% Icaridin and no Glucam P20. However, as submitted by the respondent, the results of table 2 of D17 have been independently generated (bottom of page 2 of D17) and have to be considered one set of results, while the results provided in table 1 and in the cited prior art represent other independent sets of data. Thus, the set of data of table 2 cannot be compared to, at least, the set of data of the patent and table 1 of D7. In the absence of a fair comparison, the discrepancy between the two times until the first

mosquito bite cannot call into question the validity of the experimental data provided by table 2 of D17.

The appellant also submitted that the data in D17 relied on by the respondent were insufficient to conclude that the effect was statistically significant. Indeed, the values of the times before the first mosquito bite of the examples of D17 that were according to claim 1 of the current main request and the comparative examples of D17 overlapped when the standard deviations reported in D17 were taken into account. In the absence of a significant difference in the average values of the times before the first mosquito bite, no significant improvement could be derived from D17.

The board disagrees.

The appellant's submission that there was an overlap of values is not valid for a comparison between V13 (comparative) and E7 (according to claim 1 of the current main request) because even when subtracting or adding the standard deviations from or to the average values, the time before the first mosquito bite of V13 (0.25±0.24 hours) is still lower than that of E7 (2.33±0.47 hours).

With regard to the comparison between V13 (comparative) and E8 (according to claim 1 of the current main request), to obtain comparable values of times before the first mosquito bite, the standard deviation of V13 (0.24) has to be added to the average value (0.25), and the standard deviation of E8 (0.85) has to be subtracted from the average value (1.33). This is, however, an arbitrary approach which does not reflect reality. It artificially creates a scenario in which one sample shows no improvement of the time before the

first mosquito bite due to the subtracted standard deviation, while the other sample shows a much longer time before the first mosquito bite due to the added standard deviation. This manipulation, however, does not change the average values, which remain the proper basis for comparison.

Moreover, as shown in tables 1 and 2 of D17, there is almost a doubling of the average value between V6 (comparative, 2.83 hours) and E1 (according to claim 1 of the current main request, 4.5 hours) and a fivefold or tenfold increase of the average value between V13 (comparative, 0.25 hours) and E8 (according to claim 1 of the current main request, 1.33) and E7 (according to claim 1 of the current main request, 2.33), respectively. The difference between the average values obtained between the experiments according to claim 1 and the comparative experiments is thus significant. In view of this significant difference between the average values and the fact that these values were based on results from three individual volunteers (second paragraph on page 1 of D17), this difference cannot be ignored and indicates an improvement in the protection time. Any conclusion to the contrary would have required supporting evidence, which is, however, not available.

In view of the above, the objective technical problem is the provision of a repellent composition with a longer protection time.

8.5 Obviousness

As submitted by the respondent, there is no teaching in example 5 of D2 that selecting an amount as defined in claim 1 of the current main request increases the protection time. Indeed, D2 teaches an increase of the

protection time of some repellents, but this increase is obtained differently, namely by encapsulating the repellents, as submitted by the respondent.

During the oral proceedings before the board, the parties also relied on D12 for the assessment of the obviousness of the solution proposed by claim 1 of the current main request. D12 relates to the effect of fragrance fixatives on the mosquito repellent property of citronella oil (abstract of D12). The fragrance fixatives tested encompass Glucam P20. In table 1 of D12, Glucam P20 was tested at amounts between 2.5 to 10 wt.% (formulations A2 to A4 and B2 to B4). Thus, as submitted by the respondent, D12 teaches away from the amount as defined in claim 1 of the current main request (0.1 to 1.5 wt.%).

8.6 In view of the above, the board concluded that the subject-matter of claim 1 of the current main request involves an inventive step within the meaning of Article 56 EPC when starting the assessment from D2.

9. Inventive step starting from D12 - claim 1 - Article 56 EPC

9.1 The appellant raised a second objection of lack of inventive step of the subject-matter of claim 1 of the current main request, this time starting from D12.

9.2 As set out above (see point 8.5), D12 relates to the effect of fragrance fixatives, such as Glucam P20, on the mosquito repellent property of citronella oil. D12 does not disclose at least the amount of Glucam P20, being 0.1 to 1.5 wt.%, as required by claim 1 of the current main request.

Thus, claim 1 of the current main request comprises the same distinguishing feature in view of D12 as that identified in view of D2 (see point 8.3).

It follows that the same reasoning as that given starting from D2 applies when starting from D12. Consequently, the board concluded that the subject-matter of claim 1 of the current main request involves an inventive step within the meaning of Article 56 EPC when starting the assessment from D12.

10. Inventive step starting from D3 - claim 2 - Article 56 EPC

10.1 The only objection of lack of inventive step raised by the appellant against the subject-matter of claim 2 is an objection starting from D3.

10.2 Disclosure of D3

The parties relied on table 1 of D3 as the starting point for the assessment of the inventive step of the subject-matter of claim 2 of the current main request.

Table 1 of D3 discloses a topical repellent and/or cosmetic composition comprising a cosmetic and/or repellent compound contained in a sustained release nanometric system. The repellent composition comprises, *inter alia*, a repellent ("*repelente*") and Glucam P20 ("*PPG-20 Eter de metilglicose*").

10.3 Distinguishing features

Contrary to claim 1 of the current main request, claim 2 of the current main request does not limit the amount

of Glucam P20. The amount of Glucam P20 is thus not a distinguishing feature.

The respondent submitted that the distinguishing feature of claim 2 of the current main request in view of table 1 of D12 was the combination of Icaridin, PMD and Glucam P20.

The appellant submitted that the distinguishing feature of claim 2 of the current main request in view of table 1 of D12 was the combination of Icaridin and PMD.

In the appellant's favour, it is assumed that the distinguishing feature of claim 2 of the current main request in view of table 1 of D12 is the combination of Icaridin and PMD.

10.4 Technical effect and objective technical problem

The appellant submitted that no technical effect was achieved by the distinguishing feature of claim 2 of the current main request in view of D3. It formulated the objective technical problem as the provision of an alternative.

The board does not agree.

In table 1 of D17, E2 to E6 comprise Icaridin, PMD and Glucam P20 and are according to claim 2 of the current main request. The compositions exhibit times before the first mosquito bite of 8.0±0 hours, 8.7±2.3 hours, 7.3±0.62 hours, 7.3±0.47 hours and 7.7±0.47 hours, respectively.

E1 of table 1 of D17 is a repellent composition comprising 10% Icaridin and 0.5% Glucam P20. Since this

composition does not comprise PMD as required by claim 2 of the current main request, it represents a comparative example. This composition has a time before the first mosquito bite of 4.5±2.68 hours.

V3 to V5 and V8 to V10 of D17 are repellent compositions comprising Glucam P20 and PMD. Since they do not comprise Icaridin as required by claim 2 of the current main request, V3 to V5 and V8 to V10 represent comparative examples. The compositions result in times before the first mosquito bite of 2.8±0.62 hours, 4.2±1.03 hours, 4.5±0.6 hours, 3.7±0.5 hours, 3.5±0.5 hours and 4.5±0.3 hours.

As submitted by the respondent, the above results of table 1 of D17 (and the patent) show that adding PMD to a composition comprising Icaridin and Glucam P20 or adding Icaridin to a composition comprising PMD and Glucam P20 increases the time before the first mosquito bite (see the times of E2 to E6 compared to the times of E1 and V3 to V5 and V8 to V9).

This is further underlined by the comparison of E4 to E6 (all comprising an overall amount of Icaridin and PMD of 20% and applied at an amount of 1.67 mg/cm^2) with V5 (comprising 25% PMD and applied at an amount of 4 mg/cm^2). Despite the fact that a lower amount of active ingredient (20%) and a lower application quantity (1.67 mg/cm^2) is applied in E4 to E6 than in V5 (25% of active ingredient at 4 mg/cm^2), the times before the first mosquito bite are still longer in E4 to E6 (7.3±0.62 hours, 7.3±0.47 hours and 7.7±0.47 hours for E4 to E6 versus 4.5±0.6 hours for V5).

It follows that the distinguishing feature of claim 2 of the current main request (combination of Icaridin

and PMD) achieves a longer protection time in view of D3.

Based on the same submissions as those given for the assessment of the inventive step of the subject-matter of claim 1 of the current main request starting from D2, the appellant disputed the effect achieved by the combination of Icaridin and PMD. However, for the reasons given starting from D2 (see point 8.4 above), the board does not find the appellant's submissions convincing.

Therefore, the objective technical problem is the provision of a repellent composition with a longer protection time.

10.5 Obviousness

As submitted by the respondent and not contested by the appellant, there is no suggestion in D3 or in any other document cited by the appellant that adding Icaridin and PMD to a repellent composition comprising Glucam P20 increases the protection time.

Therefore, the subject-matter of claim 2 of the current main request involves an inventive step within the meaning of Article 56 EPC when starting the assessment from D3.

11. In view of the above, the set of claims of the current main request is allowable.

Order

For these reasons it is decided that:

1. The appealed decision is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent in amended form with claims 1 to 11 of the main request, filed as auxiliary request 24 with the letter dated 30 October 2024, and a description to be adapted thereto, if necessary.

The Registrar: The Chairman:

U. Bultmann M. O. Müller

Decision electronically authenticated