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**Datasheet for the decision  
of 1 July 2021**

**Case Number:** T 0911/18 - 3.3.10

**Application Number:** 03709787.0

**Publication Number:** 1490017

**IPC:** A61K8/34, A61K8/35, A61K8/37,  
A61Q17/04

**Language of the proceedings:** EN

**Title of invention:**

STABILIZATION OF SUNSCREENS IN COSMETIC COMPOSITIONS

**Patent Proprietor:**

Unilever PLC  
Unilever N.V.

**Opponent:**

Beiersdorf AG

**Headword:**

STABILIZATION OF SUNSCREENS IN COSMETIC COMPOSITIONS/Unilever

**Relevant legal provisions:**

EPC Art. 54

**Keyword:**

Novelty - (no)

**Decisions cited:**

**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 0911/18 - 3.3.10

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.10**  
**of 1 July 2021**

**Appellant:**

(Opponent)

Beiersdorf AG  
Unnastrasse 48  
20253 Hamburg (DE)

**Representative:**

Uexküll & Stolberg  
Partnerschaft von  
Patent- und Rechtsanwälten mbB  
Beselerstraße 4  
22607 Hamburg (DE)

**Respondents:**

(Patent proprietors 1)

Unilever PLC  
Unilever House  
100 Victoria Embankment  
London  
EC4Y 0DY (GB)

**Respondents:**

(Patent proprietors 2)

Unilever N.V.  
Weena 455  
3013 AL Rotterdam (NL)

**Representative:**

James, Helen Sarah  
Unilever PLC  
Unilever Patent Group  
Bronland 14  
6708 WH Wageningen (NL)

**Decision under appeal:**

**Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
7 February 2018 concerning maintenance of the  
European Patent No. 1490017 in amended form.**

**Composition of the Board:**

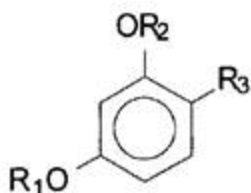
<b>Chair</b>	R. Pérez Carlón
<b>Members:</b>	J.-C. Schmid
	T. Bokor

## Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the interlocutory decision of the Opposition Division which found that the European patent No. 1 490 017 amended according to the then pending first auxiliary request met the requirements of the EPC.

Claim 1 of the first auxiliary request maintained by the Opposition Division reads as follows:

"1. A method of stabilising an organic sunscreen against oxidative or photooxidative degradation, the method comprising the step of combining 0.1 wt.% to 5 wt.% of a 4-substituted resorcinol derivative of general formula I

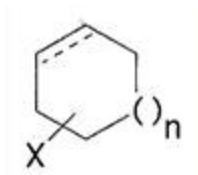


(I)

wherein each R<sub>1</sub> and R<sub>2</sub>, independently, represents a hydrogen atom, -CO-R, -COO-R, CONHR; where R represents saturated or unsaturated, linear, branched or cyclic C<sub>1</sub>-C<sub>18</sub> hydrocarbon groups; and

R<sub>3</sub> represents an alkyl group having from 1 to 18 carbon atoms or a group of the general formula (II)

(II)



wherein X is hydrogen; OR<sup>1</sup>, wherein R<sup>1</sup> represents hydrogen, (C<sub>1</sub>-C<sub>6</sub>)alkyl or aryl-(C<sub>1</sub>-C<sub>6</sub>)alkyl; OCOR<sup>2</sup> wherein R<sup>2</sup> represents (C<sub>1</sub>-C<sub>6</sub>)alkyl, aryl-(C<sub>1</sub>-C<sub>6</sub>)alkyl or phenyl; halogen; (C<sub>1</sub>-C<sub>6</sub>)alkyl; aryl-(C<sub>1</sub>-C<sub>6</sub>)alkyl, or aryl-(C<sub>1</sub>-C<sub>6</sub>)alkyl; or NHR<sup>1</sup> wherein R<sup>1</sup> is defined as above;

wherein n is 0 to 3 such that the structure of general formula II is a 5, 6, 7 or 8 membered ring;

wherein the dashed line indicates an optional double bond;  
and a cosmetically acceptable carrier;

with 0.01 wt. to 20 wt.% of an organic sunscreen in a personal care composition;

wherein the 4-substituted resorcinol derivative is present in at least an effective amount to inhibit oxidation of the organic sunscreens, wherein

the 4-substituted resorcinol is selected from 4-methyl resorcinol, 4-ethylresorcinol, 4-propyl resorcinol, 4-isopropyl resorcinol, 4-butyl resorcinol, 4-pentyl resorcinol, 4-hexyl resorcinol, 4-heptyl resorcinol, 4-octyl resorcinol, 4-nonyl resorcinol, 4-decyl resorcinol, and mixtures thereof or wherein

the 4-substituted resorcinol is selected from 4-cyclopentyl resorcinol, 4-cyclohexyl resorcinol, 4-cycloheptyl resorcinol, 4-cyclooctyl resorcinol, and mixtures thereof."

II. The appellant filed an opposition requesting revocation of the patent-in-suit in its entirety on the grounds of lack of novelty and inventive step (Article 100(a) EPC)

and insufficiency of disclosure of the invention (Article 100(b) EPC). Inter alia, document

(1) EP-A-0 341 664

was cited in the opposition proceedings.

The Opposition Division held that the subject-matter of claim 1 of the patent as granted lacked novelty over formulation example 2 on page 8 of document (1) which disclosed a composition comprising 4% by weight of 4-isoamylresorcinol and 3% by weight of 2-hydroxy-4-methoxybenzophenone, which was an organic sunscreen. In order to achieve said composition, the ingredients inevitably had to be combined. Hence, a method of combining a 4-substituted resorcinol and an organic sunscreen in the weight ratios required by claim 1 was inherently disclosed by document (1).

According to the Guidelines, F-IV, 4.13, in claims directed to a method or process aiming at a certain purpose (in the present case stabilising an organic sunscreen) comprising physical steps (e.g. combining ingredients a and b) and resulting in the production of a product (i.e. a composition), the indication of the intended purpose of the method was to be understood in the sense that the method or process had to be merely suitable for that use, rather than comprising the use as an integral method step.

Hence, it had to be decided whether 4-isoamylresorcinol fell within the definition of formula (I) of claim 1 of the granted patent.

R<sub>3</sub> in formula (I) was defined in claim 1 of the patent as granted as "an alkyl group having from 1 to 18

carbon atoms". Consequently 4-isoamylresorcinol fell within the definition of formula (I) of claim 1 of the contested patent. Hence, example 2 of document (1) anticipated claim 1 of the patent as granted.

In claim 1 of the auxiliary request 1, the 4-substituted-resorcinol derivatives of formula (I) were restricted to particular derivatives including 4-pentylresorcinol.

Claim 1 of auxiliary request 1 distinguished between 4-propyl- and 4-isopropylresorcinol and thus between linear and branched groups. Branched alkyl groups were expressly indicated. Hence, this differentiation between a linear and a branched isomer indicated that the contested patent explicitly referred to a branched isomer if this was intended. Paragraph [0029] of the patent in suit also clearly distinguished between linear and branched alkyl groups in the context of resorcinol derivatives. In the case of the latter, those branched radicals were explicitly declared. The skilled person would therefore have interpreted the compound "4-pentylresorcinol" as being actually "4-n-pentyl resorcinol".

Furthermore, the patent in suit did not provide any indication that resorcinol derivatives as referred to on page 3, lines 55-57 of document (1) could be incorporated into the example formulation 2.

Consequently, the subject-matter of claim 1 of the auxiliary request 1 was novel over document (1).

III. According to the appellant, the findings of the Opposition Division that the subject-matter of claim 1 of the patent as granted was not novel over document



(1) should also apply to the first auxiliary request. Claim 1 of the first auxiliary request differed from claim 1 of the patent as granted in that the 4-substituted-resorcinol derivative of the general formula (I) was selected from specific 4-substituted resorcinol derivatives including 4-pentyl resorcinol. A pentyl group was an alkyl group having 5 carbon atoms, which covered various isomers, namely n-pentyl, 2-pentyl (sec-pentyl), 3-pentyl, 2-methylbutyl, 3-methylbutyl (iso-pentyl or iso-amyl), 3-methylbut-2-yl, 2-methylbut-2-yl and 2,2-dimethylpropyl (neopentyl). The 4-isoamyl resorcinol disclosed in example 2 of document (1) was therefore encompassed by the generic 4-pentyl resorcinol mentioned in claim 1. The patent in suit did not specifically identify branched alkyl groups as such. Octyl methoxycinnamate (Parsol MCX, table 1; page 4, line 18) and butyl methoxy dibenzoyl methane (Parsol 1789, line 30) comprised branched alkyl groups. Accordingly, the skilled person would therefore not interpret the term 4-pentylresorcinol restrictively to exclusively mean 4-n-pentylresorcinol. Paragraph [0029] referred to by the Opposition Division was not relevant because it only dealt with the group R which in the groups -COR, -COOR and -CONHR. Moreover, there were no indications in paragraph [0029] suggesting that alkyl meant linear alkyl. On the contrary, linear alkyl groups were explicitly mentioned here, so that it was clear that branched groups were also meant by the term alkyl group without the reference to linear groups.

Furthermore, the resorcinol derivatives mentioned in document (1) were intended to be used in the same way as the isoamylresorcinol used in example 2, in particular having regard to preparatory example 1. Hence, document (1) disclosed a cream according to

example 2 containing methyl-, ethyl-, n-butyl- or n-octyl resorcinol.

The subject-matter of claim 1 of auxiliary request 1 maintained by the Opposition Division therefore lacked novelty with respect to document (1).

IV. According to the respondents (patent proprietors), for the term pentyl, an interpretation under Article 69 EPC was proper. The term pentyl in the claim could not be seen simply as five carbon atoms, and clearly did not include isoamyl, in the same manner as it did not include cyclopentyl, given that it was mentioned separately.

Claim 1 distinguished between "propyl" and "isopropyl" radicals. Therefore the skilled person understood that if branched alkyl chains were intended, these radicals would have been identified as such. Consequently, the skilled person would clearly interpret "4-pentyl resorcinol" as a resorcinol derivative with a linear C<sub>5</sub>-alkyl radical at position 4.

It was irrelevant what the general understanding of alkyl was. In cosmetics, nomenclature was far from uniform. It was relevant what a skilled person reading the claims and description understood alkyl to mean. The terminology used for different aspects of the invention, e.g organic sunscreens, relating to entirely different species was not relevant. Parsol MCX and Parsol 1789 with their respective CTFA designations were well known compounds and did not show that octyl and butyl in general would always include branched groups.

Therefore, the 4-pentyl resorcinol recited in claim 1 did not include a branched C<sub>5</sub> alkyl carbon chain at position 4. This was further demonstrated by the deletion of the isoamyl groups in the description.

When assessing novelty over a document, the entire content of the document should be taken into account. However, this did not mean that the document was a reservoir of features that could be freely combined at will. In order to be considered as novelty destroying, a feature had to be directly and unambiguously disclosed in a prior art document. Merely combining certain parts of the description without a specific teaching to do so was not permitted. In the absence of a clear teaching to combine the resorcinol derivatives disclosed in document (1) with an organic sunscreen, the subject-matter matter of claim 1 maintained by the Opposition Division was novel over document (1).

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

The respondents requested that the appeal be dismissed, i.e. that the patent be maintained in an amended form as held allowable by the Opposition Division.

- VI. At the end of the oral proceedings held on 1 July 2021, the decision of the Board was announced.

## **Reasons for the Decision**

*Main request: claims maintained by the Opposition Division*

*Novelty*

1. Claim 1 is directed to a method comprising the step of combining 0.1 wt.% to 5 wt.% of particular 4-substituted resorcinol derivatives and a cosmetically acceptable carrier with 0.01 wt.% to 20 wt.% of an organic sunscreen in a personal care composition. Claim 1 further states that the claimed method is for stabilising an organic sunscreen against oxidative or photooxidative degradation. The 4-substituted resorcinol derivatives include 4-pentyl resorcinol.

The conclusion of the Opposition Division, shared by the Board, that the purpose of the claimed method, namely the stabilization of an organic sunscreen, cannot be regarded as a functional technical feature of the claim was not disputed.

Document (1) discloses a cosmetic composition comprising 4% by weight of 4-isoamyl resorcinol and 3% by weight of 2-hydroxy-4-methoxybenzophenone, which is an organic sunscreen according to the patent in suit (page 3, lines 53-54).

Hence, the disclosure of this composition amounts to the disclosure of a method of combining 4-isoamyl resorcinol, a cosmetically acceptable carrier and an organic sunscreen, in a personal care composition.

2. The sole question that arises in these appeal proceedings with regard to the novelty of the subject-matter of claim 1 in view of formulation example 2 of document (1) is whether 4-isoamyl resorcinol falls within the (generic) term 4-pentyl resorcinol referred to in claim 1 as the required 4-substituted resorcinol.

Isoamyl is a common name for isopentyl. 4-isoamyl resorcinol is therefore a resorcinol which is substituted in position 4 with an isopentyl group. Isopentyl is a branched pentyl group.

In organic chemistry, pentyl designates a five-carbon alkyl group with the chemical formula  $-C_5H_{11}$ .

The 4-isoamyl resorcinol derivative falls therefore under the definition of a 4-pentyl resocinol.

3. Consequently, the subject-matter of claim 1 of auxiliary request 1 as maintained by the Opposition Division lacks novelty over document (1).
4. According to the respondents, the term 4-pentyl resorcinol as expressed in claim 1 referred to a resorcinol derivative which was substituted at the 4-position by a linear pentyl group, excluding the branched pentyl group disclosed in document (1).
  - 4.1 According to the respondents, claim 1 listed 4-propyl resorcinol and 4-isopropyl resorcinol. Propyl radical, without a prefix, must be understood as the linear propyl group. Furthermore, claim 1 specifically mentioned cycloalkyl groups. Thus, if a specific alkyl group different from the linear group was intended, it was specifically mentioned. Therefore, the pentyl radical without prefix was exclusively linear pentyl.

However, prefixes serve to designate specific isomers of an alkyl group. For the pentyl group, n-pentyl is the linear pentyl group ( $CH_3-(CH_2)_3-CH_2-$ ) and isopentyl is the radical of a branched pentyl group ( $(CH_3)_2CH-CH_2-CH_2-$ ). Pentyl without any prefix does not designate any

specific isomer but only indicates that it falls under the general formula  $-C_5H_{11}$ .

Furthermore, the fact that a list comprises both a class of compounds defined by a general definition and a specific compound falling within the ambit of the general definition does not allow to interpret the general definition as excluding those compounds explicitly mentioned in the list.

With respect to the citation of specific 4-cycloalkyl resorcinol derivatives in claim 1, the Board notes that cycloalkyl, which has the generic formula  $-C_nH_{2n-1}$ , does not fall within the definition of an alkyl group, which has the formula  $-C_nH_{2n+1}$ . In the present case, cycloalkyl groups fall under formula (II) in claim 1.

This argument of the respondents is therefore rejected.

- 4.2 According to the respondents, it was clear that alkyl referred only to a linear alkyl in the context of the patent, because when a branched alkyl groups was intended, this was expressly indicated.

The Board concurs with the respondents' view that when a branched alkyl radical is intended in the patent in suit this is specifically expressed. However, the same also applies to the linear alkyl groups.

Paragraph [0028] of the granted patent, which defines the group  $R_3$  corresponding to the alkyl substituent at position 4 of the resorcinol derivatives, refers to

- an **alkyl** group, preferably having from 1 to 18 carbon atoms,

- preferably 2 to 12 carbon atoms, with or without substitution of one or more hydrogen atoms of a **linear alkyl** group with a methyl or ethyl group; e.g., R<sub>3</sub> constitutes **linear** or branched **chain alkyls**.

According to claim 3 of the patent as granted the 4-substituted resorcinol is selected from 4-**linear alkyl** resorcinols, 4-branched alkyl resorcinols, 4-cycloalkyl resorcinols, and mixtures thereof.

Although paragraph [0029], cited by the Opposition Division and the respondents, does not refer to the R<sub>3</sub> group, this section, when relating to a linear alkyl group, also follows that structure.

"In the above formula (1), the **unsubstituted linear alkyl** group represented by R and preferably having from 2 to 12 carbon atoms may include an ethyl group, a propyl group, a butyl group, a pentyl group, a hexyl group, a heptyl group, an octyl group, a nonyl group, a decyl group, an undecyl group and a dodecyl group. These **linear alkyl** groups may be substituted with a methyl or ethyl group at one or more hydrogen atoms thereof."

Accordingly, the patent in suit distinguishes between alkyl and linear alkyl.

- 4.3 According to the respondents, Article 69 EPC provides that the claims are to be interpreted in the light of the description. The amended description made clear that resorcinol derivatives having branched alkyl radical were not encompassed by the claimed method, since any reference to the isoamyl group and to branched alkyl groups had been deleted. Therefore, the term 4-pentyl in claim 1 should be interpreted

according to the amended description of the patent in suit.

However, Article 69 EPC sets out that the extent of protection conferred by a European patent shall be determined by the terms of the claims, possibly as interpreted with the help of the description and the drawings, if any. The purpose of the Protocol on interpretation of Article 69 EPC was to make clear that the extent of protection conferred was not limited to the strict literal meaning of the terms of the claims. Article 69 EPC and its Protocol do not provide a basis for excluding what is literally covered by the terms of the claims. Furthermore, neither Article 84 EPC, nor Article 69 EPC or its Protocol provide any legal basis for a claim interpretation that is based on a comparison between the application as filed and the patent as granted, or on a comparison between different claim versions.

The respondents' restrictive interpretation of the feature pentyl in order to provide a distinction over the prior art is inconsistent with the interpretation of the terms of the claim.

This argument also does not convince the Board.

5. Accordingly, all respondents' arguments regarding the restrictive interpretation of pentyl to exclusively mean n-pentyl being rejected, the Board arrives at the conclusion that 4-isoamyl resorcinol, disclosed in document (1), falls under the ambit of the 4-pentyl resorcinol derivative required by the claimed method, with the consequence that claim 1 maintained by the Opposition Division lacks novelty over document (1).



## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chair:



C. Rodríguez Rodríguez

R. Pérez Carlón

Decision electronically authenticated