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D E C I S I O N
of 2 March 2005

Case Number: T 0217/03 - 3.3.6

Application Number: 94911332.8

Publication Number: 0690868

IPC: C07H 15/04

Language of the proceedings: EN

Title of invention:
Alkyl glucoside and use thereof

Patentee:
Akzo Nobel Surface Chemistry Aktiebolag

Opponent:
CONDEA AUGUSTA S.p.A.

Headword:
Low foaming APG/AKZO NOBEL

Relevant legal provisions:
EPC Art. 54, 56, 123(2)

Keyword:
"Admissibility of disclaimer (main request) - no: anticipation not accidental"
"Novelty (auxiliary request) - yes: indication of purpose being technical feature of the use claim"
"Inventive step (auxiliary request) - yes: selected class of surfactants having unexpected combination of properties"

Decisions cited:
G 0001/03, T 0009/81, G 0006/88

Catchword:
-



Case Number: T 0217/03 - 3.3.6

D E C I S I O N
of the Technical Board of Appeal 3.3.6
of 2 March 2005

Appellant:
(Opponent)

CONDEA AUGUSTA S.p.A.
Via Imperatore Federico, 60
I-90143 Palermo (IT)

Representative:

-

Respondent:
(Proprietor of the patent)

Akzo Nobel Surface Chemistry Aktiebolag
S-444 85 Stenungsund (SE)

Representative:

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 18 December 2002
rejecting the opposition filed against European
patent No. 0690868 pursuant to Article 102(2)
EPC.

Composition of the Board:

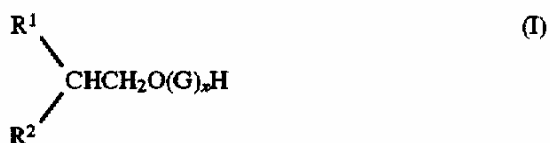
Chairman: P. Krasa
Members: L. Li Voti
A. Pignatelli

Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to reject the opposition against the European patent no. 0 690 868, relating to alkyl polyglycosides (APG) and the use thereof in a cleaning composition, and to maintain the patent in unamended form.

The granted set of claims contains 14 claims, independent claims 1 and 10 of which reading, respectively, as follows:

"1. Use of an alkyl glycoside of the general formula

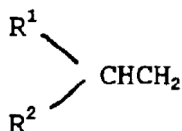


wherein R^1 is an alkyl group having 2 to 5 carbon atoms, R^2 is an alkyl group having 4 to 7 carbon atoms, the sum of the carbon atoms in R^1 and R^2 being 7 to 11, G is a monosaccharide residue, and x is 1 to 4, in a cleaning composition for cleaning hard surfaces."

"10. An alkyl glucoside of the general formula



wherein R¹ is an alkyl group having 2 to 5 carbon atoms, R² is an alkyl group having 4 to 7 carbon atoms, the sum of the carbon atoms in R¹ and R² being 7 to 11, G is a monosaccharide residue, and x is 1 to 4 with the proviso that the group



is not 2-butyloctyl."

Dependent claims 2 to 9 and 11 to 14 relate to specific embodiments of the respectively claimed use or product.

In particular claim 11 requires that R¹ is an alkyl group having 2 to 4 carbon atoms, R² is an alkyl group having 4 to 6 carbon atoms and the sum of the carbon atoms in R¹ and R² is 7 to 9.

II. In its notice of opposition the Opponent sought revocation of the patent on the grounds of Articles 100(a), because of lack of novelty and inventive step of the claimed subject-matter, and of Article 100(c) EPC.

The following documents were referred to *inter alia* in support of the opposition:

(1): EP-A-0387912

(2): EP-A-0070074

(3): collection of Derwent abstracts 7/24 to 24/24

III. In its decision the Opposition Division found that

- the proviso contained in the product claim 10 rendered the claimed subject-matter novel over document (1);
- since the disclosure of document (1) was an accidental anticipation, the proviso contained in claim 10 did not contravene the requirements of Article 123(2) EPC;
- since document (1) was completely silent about the possible applications of the APGs disclosed therein, the use claim 1 was also novel over the disclosure of that document;
- document (3) and in particular the abstracts 7/24 or 18/24 thereof, disclosing low foaming compositions comprising APGs and suitable for cleaning hard surfaces, represented the closest prior art for the evaluation of inventive step;
- it was not obvious for the skilled person in the light of the teaching of the prior art to select the type of branched APGs used in the patent in suit in order to provide a low foaming class of APG surfactants having a good cleaning performance on hard surfaces;
- furthermore, the comparative tests filed by the Opponent were not relevant since the tested products were mixtures containing great amounts of

APGs not corresponding to the definition of formula (I) of the patent in suit;

- therefore, the claimed subject-matter involved an inventive step.

IV. An appeal was filed against this decision by the Opponent (Appellant).

The Respondent and Patent Proprietor filed under cover of a letter dated 28 July 2003 two amended sets of 13 claims as first and second auxiliary requests.

The set of claims according to the first auxiliary request differs from that of the main request (claims as granted) only insofar as claim 10 is the combination of claims 10 and 11 as granted (see point I above), the granted claims 12 to 14 have been renumbered as 11 to 13 and the proviso contained in granted claim 10 is no longer present.

The set of claims according to the second auxiliary request differs from that of the first auxiliary request insofar as the formula (I) of the APGs used in claim 1 have been limited as in claim 10 of that request wherein R^1 is an alkyl group having 2 to 4 carbon atoms, R^2 an alkyl group having 4 to 6 carbon atoms and the sum of the carbon atoms in R^1 and R^2 is from 7 to 9.

The Appellant communicated under cover of a letter dated 20 January 2005 that it will not be represented at the oral proceedings.

During the oral proceedings held before the Board on 2 March 2005 in the absence of the Appellant the Respondent filed amended pages 2 and 5 of the description adapted to the version of the claims according to the first auxiliary request.

V. The Appellant submitted in writing inter alia that

- document (1) disclosed APG surfactants, inter alia one having a 2-butyloctyl residue; the proviso contained in claim 10 of the main request was thus based upon this disclosure of document (1);
- since document (1) could not be considered to be an accidental anticipation, the proviso of claim 10 was an inadmissible disclaimer which contravened the requirements of Article 123(2) EPC;
- the APG surfactants disclosed in document (1) would have been understood by the skilled person to be destined, because of their intrinsic properties, for use in cleaning compositions;
- APGs were known to the skilled person at the priority date of the patent in suit to be suitable for application in cleaning compositions for both hard and soft surfaces;
- the subject-matter of claim 1 of the main request differed apparently from the disclosure of document (1) only insofar as the APGs were used in a composition for cleaning hard surfaces;

- however, the application to hard surfaces was an indication of purpose inherent to the used product and thus not technically meaningful and not limiting, as explained in the decision T 9/81 (OJ EPO 1983, 372);
- the above mentioned alleged distinguishing feature amounted thus only to the evaluation of the suitability of a known surfactant for a known use;
- therefore, the claimed specific use did not amount to a distinguishing feature and the subject-matter of claim 1 had to be considered not to be novel;

As regards inventive step the Appellant put forward that

- document (1), which disclosed an APG surfactant belonging to the class of surfactants according to formula (I) of claim 1 of the patent in suit, had to be considered to represent the closest prior art;
- the class of APGs used in the patent in suit could be used in combination with other surfactants;
- the tests filed at first instance on the commercial products ISALCHEM 11 and ISALCHEM 123, which contained APGs according to the formula (I) of the patent in suit, showed that the technical problem underlying the claimed invention, i.e. the provision of a class of low foaming surfactants having a good cleaning performance on hard surfaces, had not been solved throughout the

entire scope of the claims since the selected APGs did not show the desired low foaming behaviour when used in combination with other surfactants;

- the Respondent's tests filed at first instance as a response to the Appellant's own tests were not relevant since the foaming behaviour had been measured in those tests by a different method;
- the use of the APG surfactants in hard surface cleaners was known, e.g., from the teachings of documents (2) and (3);
- it was thus obvious for the skilled person to use an APG corresponding to the formula (I) of the patent in suit, as that disclosed in document (1), in a composition for cleaning hard surfaces;
- the claimed subject-matter lacked thus an inventive step.

VI. The Respondent submitted in writing and orally *inter alia* that

- it was clear from the description and from the definition of G in the formula (I) of the selected class of APGs that the APGs of claim 10 did not encompass only glucose derivatives but any monosaccharide derivative, i.e. **glycoside** derivatives; the wording "alkyl glucoside" in the first line of claim 10 of the main request had thus to be understood to mean "alkyl glycoside";

- document (1) did not disclose any specific properties for the cited APGs and thus did not deal with the technical problem underlying the claimed invention of providing low foaming APGs having a good cleaning performance on hard surfaces;
- document (1) had thus to be considered to represent an accidental anticipation and the disclaimer contained in claim 10 was admissible and did not contravene the requirements of Article 123(2) EPC;
- claim 10 of the first auxiliary request did not require any longer the disclaimer contained in granted claim 10 since it was limited to APGs having an alkyl rest of 9 to 11 carbon atoms which did not encompass a butyloctanol derivative as disclosed in document (1);
- document (1) did not mention any use or advantageous properties of the disclosed APGs; moreover, even though APGs were generally known to be suitable for use in cleaning compositions, there existed many different possible applications of these surfactants in very different technical fields, hard surface cleaning being only one of them; therefore, the subject-matter of claim 1 was also novel;
- as regards inventive step, the closest prior art was represented by the compositions of abstract 18/24 of document (3) relating to low foaming

compositions for cleaning hard surfaces comprising alkoxyated APGs;

- the technical problem underlying the claimed invention amounted thus to the provision of an alternative low foaming class of APGs having a good cleaning performance on hard surfaces;
- the examples of the patent in suit and the tests filed by the Respondent at first instance showed the good combination of properties, i.e. good cleaning performance on hard surfaces and low foaming, of the selected APGs;
- the prior art did not suggest the specific properties of the selected surfactants and on the contrary it suggested that non alkoxyated APGs gave a high stable foam;
- the Appellant's tests filed at first instance were not relevant since they regarded products not belonging to the prior art which contained a great amounts of surfactants not corresponding to the definition of the patent in suit;
- it was thus not obvious for the skilled person to select the class of APGs of the patent in suit for solving the technical problem underlying the claimed invention.

VII. The Appellant requests that the decision of first instance be set aside and that the patent be revoked.

The Respondent requests that the appeal be dismissed or alternatively that the patent be maintained on the basis of the first or second auxiliary requests filed under cover of the letter dated 28 July 2003.

Reasons for the Decision

1. *Main Request*

1.1 Admissibility of the disclaimer in claim 10 of the main request

1.1.1 The set of claims according to the main request consists of claims 1 to 14 as granted.

The first line of granted claim 10 relates to "alkyl glucosides", i.e. literally to alkyl substituted glucose derivatives, having the general formula (I).

However, in such formula (I) G is an unspecified monosaccharide unit, i.e. a "glycoside" including glucose and all other known monosaccharides. Only dependent claim 13 specifies that G is a glucose residue.

Moreover, claim 1 relates to the use of "glycosides" (and not "glucosides") having the same formula (I) of the compounds of claim 10 and the counterpart of claim 10 in the description of the patent in suit relates to "alkyl glycosides" of formula (I) (see page 2, line 44).

Therefore, the Board finds, in agreement with the Respondent, that this claim should be interpreted as

not relating only to "glucosides", i.e. glycosides wherein G is glucose, but to "glycosides" of formula (I) wherein G is a monosaccharide unit including glucose and all other known monosaccharides.

Compounds of formula (I) wherein the alkyl rest is a 2-butyloctyl are excluded in claim 10 by means of a disclaimer (see point I above).

- 1.1.2 The patent in suit and the corresponding parts of the application as originally filed disclose in example 2 the preparation of an APG having a 2-butyloctanol rest wherein G is a glucose unit. However, the application as originally filed does not contain any support for all other possible alkyl glycosides encompassed by the disclaimer of claim 10 having a 2-butyloctyl rest and with G being a monosaccharide different from glucose.

Therefore, the disclaimer of claim 10 does not find fully support in the application as originally filed.

- 1.1.3 The Board finds that, as submitted by the Appellant and not disputed by the Respondent, document (1), which is a document cited under Article 54(2) EPC, discloses an APG corresponding to said formula (I) and specifically an APG having a 2-butyloctyl rest and with G being a monosaccharide unit (see page 3, lines 15 to 21, 27 and 32 to 40).

Thus, it is to be evaluated if this disclaimer, introduced into claim 10 in order to re-establish novelty over document (1), is admissible under Article 123(2) EPC.

1.1.4 According to the established jurisprudence of the Boards of Appeal of the EPO a disclaimer introduced for restoring the novelty of a claim against a disclosure in a prior art document cited under Article 54(2) EPC and having no proper basis in the application as originally filed may be admissible under Article 123(2) EPC if said prior art disclosure is an accidental anticipation; moreover, an anticipation can be considered to be accidental if it is so unrelated and remote from the claimed invention that the person skilled in the art would have never taken it into account when making the invention (see G 1/03, OJ EPO 2004, 413, headnote 2.1).

Since a skilled person, in making an invention, would have to consult, under certain circumstances, also documents in a remote technical field or relating to a different technical problem, the fact that the prior art document containing the alleged accidental anticipation does not deal with the technical problem underlying the claimed invention is not decisive for accepting the disclosure of such a document as an accidental anticipation (see G 1/03, point 2.2.2 of the reasons for the decision).

It should thus be evaluated if the disclosure of document (1) is an accidental anticipation or not.

As also admitted by the Appellant, document (1) does not deal explicitly with the technical problem underlying the claimed invention, i.e. that of providing a class of APGs having a good cleaning performance on hard surfaces and low foaming properties.

However, as explained above, this is not decisive for accepting document (1) as an accidental anticipation.

Since the subject-matter of claim 10 relates to an alleged novel class of APG surfactants as such, the skilled person, in making this invention, would have, in the Board's judgement, necessarily looked for classes of APG surfactants having an alkyl residue of similar length already known in the prior art. Thus, it would have also considered document (1) disclosing APG surfactants having an alkyl residue of a length similar to that of formula (I) of claim 10 of the main request, which APGs have an excellent hue and are thus especially suitable for commercial application (see page 2, lines 4 to 18).

Therefore, the Board concludes that document (1) relates to the same general technical field as that of the subject-matter of claim 10, i.e. that of APG surfactants, and it is not from a technical point of view so unrelated and remote that the person skilled in the art would never have taken it into consideration when working on the invention (see G 1/03, point 2.2.2 of the reasons for the decision).

The disclosure of document (1) cannot thus be considered to represent an accidental anticipation. Therefore, the disclaimer contained in claim 10 does not fulfil the conditions required to render it admissible.

The subject-matter of claim 10 thus does not comply with the requirements of Article 123(2) EPC.

The main request is thus to be dismissed on these grounds.

2. *First auxiliary request*

2.1 Articles 123(2) and (3) EPC

2.1.1 The set of claims according to the first auxiliary request differs from that of the main request insofar as claim 10 is the combination of claims 10 and 11 as granted, the granted claims 12 to 14 have been renumbered as 11 to 13 and the proviso contained in granted claim 10 is no longer present.

The APGs of claim 10 of this request have thus an alkyl group R^1 of 2 to 4 carbon atoms, an alkyl group R^2 of 4 to 6 carbon atoms and a sum of the carbon atoms in R^1 and R^2 of 7 to 9, i.e. an alkyl chain length of 9 to 11 carbon atoms instead of 9 to 13 as in granted claim 10.

This amended claim is supported by claim 2 as originally filed and complies thus with the requirements of Article 123(2) EPC.

2.1.2 Since the disclaimer contained in the granted claim 10 concerned a 2-butyloctyl glycoside, i.e. a C_{12} APG, and APGs having such a chain length are already excluded from the formula (I) of claim 10 of this request because of the limitation as to the sum of the carbon atoms in R^1 and R^2 of 7 to 9 (see point 2.1.1 above), the claimed subject-matter is more limited than that of the granted claim 10.

2.1.3 The Board is thus satisfied that the claims according to the first auxiliary request comply with the requirements of Articles 123(2) and (3) EPC.

2.2 *Novelty*

2.2.1 The Board is satisfied that the subject-matter of claim 10 of this request is novel over document (1) since the formula (I) of this claim does not encompass any longer the C₁₂ APGs disclosed in document (1), as explained in point 2.1.2 above.

Moreover, even though the commercial products ISALCHEM 11 and ISALCHEM 123 tested by the Appellant at first instance are mixtures of APGs containing compounds corresponding to said formula (I), neither the Appellant argued that these mixtures were commercially available before the priority date of the patent in suit nor evidence was brought before the Board that some APGs corresponding to said formula (I) had been disclosed in the prior art.

Therefore, the subject-matter of claim 10 has to be considered to be novel.

2.2.2 Claim 1 relates to the use of the selected class of APGs in cleaning compositions for cleaning hard surfaces (see points I and IV above).

Since document (1) teaches that APGs have a foam-stabilizing effect on other anionic surfactants and are less irritating than other surfactants (page 2, lines 11 to 13), the Appellant argued that it implicitly discloses their use in cleaning compositions.

However, it has not been disputed by the Appellant that document (1) does not explicitly disclose the specific use of an APG according to formula (I) in compositions for cleaning hard surfaces.

The subject-matter of claim 1 of the main request differs thus apparently from the disclosure of document (1) only insofar as the APGs are used in a composition for cleaning hard surfaces.

- 2.2.3 In the Appellant's view the application to hard surfaces is an indication of purpose inherent to the used product and thus not technically meaningful and not limiting, as explained in the decision T 9/81; therefore, this feature amounts only to the evaluation of the suitability of a known surfactant for a known use and is not a distinguishing one.

The Board notes that the above mentioned decision discussed the indication of purpose in a product claim and found that this indication of purpose in such claims could be not limiting on the claimed subject-matter (see T 9/81, point 7 of the reasons for the decision). The disputed claim 1 is instead a use claim wherein an indication of purpose is to be considered, according to the established jurisprudence of the Boards of Appeal of the EPO, as a technical feature of the claimed subject-matter (see G 6/88, OJ EPO 1990, 114, headnote and point 9 of the reasons for the decision).

Therefore, the specified use "for cleaning hard surfaces" is also a technical feature of claim 1.

It remains thus to be evaluated if document (1) discloses implicitly the use in a cleaning composition for cleaning hard surfaces, i.e. if in reading this document the skilled person would have considered this specific use to belong to his common general knowledge at the publication date of this document and to be necessarily associated with the disclosure of document (1).

2.2.4 Even though it was generally known at the publication date of document (1) that APG surfactants were suitable for use in cleaning compositions, e.g. for cleaning hard surfaces, the Board finds that the APGs were known to the skilled person to be suitable for application not only in cleaning compositions but in many different technical fields, some of which were also unrelated to detergency (see e.g. document (3), abstract 22/24, citing their application in compositions for cleaning hard surfaces, e.g. in toilet cleaners or in equipments utilising hard water or in acidifying compositions for oil wells and open rock formations to allow free drainage of oil into a sump as well as document (2), page 1, lines 4 to 9 and page 12, line 25 to page 14, line 3, citing their application *inter alia* in laundry and personal cleaning products, dishwashing, fire fighting, oil well drilling, ore beneficiation, solution mining, washing hair and preparation of foamed solid structures).

Moreover, the citation in document (1) that APGs have a foam-stabilizing effect on other anionic surfactants and are less irritating than other surfactants (page 2, lines 11 to 13), does not disclose implicitly, in the

Board's view, any application to a cleaning operation but only illustrates the known properties of these known class of surfactants.

Therefore, the Board finds that cleaning applications were only one out of the many possible applications of APG surfactants known to the skilled person and that hard surface cleaning was also one out of the many known possible cleaning applications suggested in the prior art.

Since document (1) did not suggest neither explicitly nor implicitly any specific use for the disclosed APG surfactants and, in particular, for the 2-butyl-octylglycoside belonging to the class of APGs defined by the formula (I) of claim 1 of the first auxiliary request, its disclosure cannot be considered to anticipate the use of such a specific compound in cleaning compositions for hard surface cleaning.

The Board concludes that the subject-matter of claim 1 of the first auxiliary request is novel.

2.3 Inventive step

2.3.1 The claimed invention relates to the provision of a new class of APGs having an advantageous combination of cleaning power on hard surfaces and low foaming (see page 2, lines 3 to 4 and 23 to 24 of the patent in suit).

As explained in the description APGs were only used to a limited extent in compositions for the cleaning of

hard surfaces because of their too high foaming and/or poor cleaning power (see page 2, lines 20 to 22).

The Board finds thus that document (1) is not a suitable starting point for the evaluation of inventive step since, as explained above in point 2.2.3, it does not suggest any specific possible application of the disclosed surfactants.

On the contrary, document (3), and specifically the abstract 18/24, discloses a low foaming composition which is suitable for cleaning hard surfaces and comprises a specific class of alkoxyated APGs which does not contribute substantially to the foaming of the composition.

Therefore, such compositions are found by the Board to be a suitable starting point for the evaluation of inventive step.

- 2.3.2 The technical problem underlying the claimed invention, seen in the light of these known compositions, consisted in the provision of an alternative low foaming class of APG surfactants capable of efficiently cleaning hard surfaces.

By comparing the compositions 2 and 4 of example 3 of the patent in suit with the compositions A and B containing glycosides of the prior art having an alkyl chain shorter than that of formula (I) of the patent in suit (see page 2, lines 9 to 16 of the description), it results that the selected APGs have a low foaming behaviour like these known alkyl glycosides but a much better cleaning power on hard surfaces.

Moreover, a comparison of the same examples 2 and 4 with compositions C and D shows that known linear APGs having an alkyl rest of the same length as the APGs of the patent in suit have a worse cleaning power and are much more foaming.

The experimental tests filed by the Appellant at first instance are instead not relevant since the tested products ISALCHEM 11 and ISALCHEM 123 were mixtures of APGs containing a great amount of surfactants (more than 40% in ISALCHEM 11 and more than 50% in ISALCHEM 123) not corresponding to the formula (I) of the patent in suit, which surfactants necessarily influenced the foaming behaviour of the tested compositions.

Therefore, these tests cannot prove in the Board's judgement that the selected class of APGs of the patent in suit is not low foaming or has no cleaning performance on hard surfaces.

The Board is thus convinced, in the light of the tests contained in the patent in suit, that the selected class of APGs solved the above mentioned technical problem.

- 2.3.3 The Board finds that it was the general teaching of the prior art that APG surfactants produce generally a high and stable foam (see e.g. document (1), page 2, lines 12 to 13; document (2) page 12, lines 15 to 25 and examples IIA, IIIA and VI as well as document (3), abstracts 8/24 and 10 to 15/24).

Low foaming APG surfactants were also apparently known (see, e.g., the glycosides having an alkyl chain shorter than that of formula (I) of the patent in suit

cited in the description of the patent in suit (page 2, lines 9 to 16) and tested in example 3 as glycosides A and B).

However, as mentioned in the patent in suit (page 2, lines 20 to 22) and discussed in example 3, the known APGs were too high foaming and/or had a poor cleaning performance on hard surfaces (see point 2.3.2 above).

Since document (1), the only document of the prior art disclosing an APG according to the formula (I) of the patent in suit, does not disclose any specific properties or application of such a surfactant (see point 2.2.3 above), the Board concludes that the prior art did not contain any suggestion that the class of APGs selected in the patent in suit would have such a good combination of properties of being low foaming and having a good cleaning performance on hard surfaces.

Moreover, the selected surfactants would exert their properties also in compositions comprising other surfactants which may by themselves provide high foam. The APGs of the patent in suit would thus also in such a case solve the technical problem underlying the claimed invention by not contributing substantially to the foaming of the composition and by increasing its cleaning performance.

The Board concludes thus that the subject-matter of claims 1 and 10 involves an inventive step.

The same conclusions apply also to the other claims of this request.

2.4 Amendments to the description

As to the amended pages 2 and 5 of the description of the patent in suit, filed by the Appellant during oral proceedings, the Board is satisfied that they bring the description into agreement with the claims of the first auxiliary request and thus comply with the requirements of the EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance department with the order to maintain the patent in the following version:
 - **claims:** 1 to 13 of the first auxiliary request submitted on 28 July 2003;
 - **description:** pages 2 and 5 as submitted during oral proceedings and pages 3 and 4 as granted.

The Registrar:

The Chairman:

G. Rauh

P. Krasa