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**Datasheet for the decision
of 11 March 2009**

Case Number: T 0094/07 - 3.3.06

Application Number: 97306644.2

Publication Number: 0826766

IPC: C11D 1/10

Language of the proceedings: EN

Title of invention:

Wash composition

Patentee:

Ajinomoto Co., Inc.

Opponent:

Cognis GmbH

Headword:

Dipeptide containing composition/AJINOMOTO

Relevant legal provisions:

EPC Art. 123(2), 54(1)(2), 56

Keyword:

"Added subject-matter (main and first auxiliary request): yes
- inadmissible amendment based on a weight ratio disclosed in
the examples only"

"Novelty (second auxiliary request): yes - no proof beyond all
reasonable doubt that the methods of preparation of the cited
prior art lead inevitably to the formation of the claimed
product"

"Inventive step (second auxiliary request): yes"

Decisions cited:

G 0001/93, T 0201/83, T 0666/89, T 0793/93, T 0002/81,
T 0012/81

Catchword:

-



Case Number: T 0094/07 - 3.3.06

D E C I S I O N
of the Technical Board of Appeal 3.3.06
of 11 March 2009

Appellant: Cognis GmbH
(Opponent) Postfach 13 01 64
D-40551 Düsseldorf (DE)

Representative: -

Respondent: Ajinomoto Co., Inc.
(Patent Proprietor) No. 15-1, Kyobashi 1-chome
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Tokyo 104 (JP)

Representative: Nicholls, Kathryn Margaret
Mewburn Ellis LLP
33 Gutter Lane
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
22 November 2006 concerning maintenance of
European patent No. 0826766 in amended form.

Composition of the Board:

Chairman: P.-P. Bracke
Members: L. Li Voti
J. Van Moer

Summary of Facts and Submissions

I. The present appeal is from the decision of the Opposition Division to maintain in amended form European patent no. 0 826 766 concerning a wash composition.

II. In its notice of opposition the Opponent, referring *inter alia* to documents

- (1): Experimental Report cog-04-00908 "Synthesen und analytische Untersuchungen von ACG und ACGG" by Chemisches Laboratorium Dr. R. Fülling, 29.03.2004;
- (3): JAOCS, vol. 49, pages 157 to 161, March 1972, "Surface Active N-Acylglutamate: I. Preparation of Long Chain N-Acylglutamic Acid" by M. Takehara et al.;
- (4): JP-A-632962 (English translation); and
- (5): JP-B-4835058 (English translation),

sought revocation of the patent on the grounds of Article 100(a) EPC, because of lack of novelty and inventive step of the claimed subject-matter.

Moreover, during the oral proceedings held before the Opposition Division, the Opponent submitted that claim 3 according to the then pending main request contravened the requirements of Article 123(2) EPC.

III. In its decision, the Opposition Division found *inter alia* that

- the examples of the patent appeared to show as a general teaching that the resistance to hard water of the claimed binary compositions was associated to a

weight ratio of component (A) to component (B) of 5:100; therefore, taking into account G 1/93 (OJ 1994, 541) and T 201/83 (OJ 1984, 481), claim 3 complied with the requirements of Article 123(2) EPC even though there was not an explicit disclosure of such a ratio of 5:100 in other parts of the description;

- even though document (1) appeared to show that an isomeric mixture of N-lauroylglutaminglutamate (an acylglutaminglutamate hereinafter referred to as **ACGG**) was obtained as by-product by reworking some examples of documents (3) to (5), it had not been made credible that the compound of claim 4 had been isolated; to the contrary, document (1) indicated that the isomeric mixture of **ACGG** had not been separated into its single components; therefore, the subject-matter of claim 4 was novel over the cited prior art;

- since the Opponent had not raised any objections against the inventiveness of the claimed subject-matter and numerous examples of the patent in suit demonstrated the resistance to hard water of the binary compositions of the invention, the subject-matter of the claims according to then pending main request involved an inventive step over the cited prior art.

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

The Appellant submitted with the statement of the grounds of appeal the following document:

(2): Experimental Report cog-07-00415 by Chemisches Laboratorium Dr. R. Füllung, 13.03.2007.

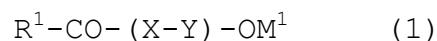
With the letter of 17 October 2007 the Respondent (Patent Proprietor) submitted new sets of claims according to the first to seventh auxiliary requests.

Oral proceedings were held before the Board on 11 March 2009.

During oral proceedings the compliance with Article 123(2) EPC of claim 3 according to the main request and the first auxiliary request was discussed with the Respondent.

- V. The set of 4 claims according to the **main request**, i.e. the set of claims found by the Opposition Division to comply with the requirements of the EPC, contains an independent claim 1 reading as follows:

"1. Use of (A) an N-long-chain-acyl dipeptide represented by formula (1)



or a salt thereof wherein X and Y, independently from each other, represent an acidic amino acid residue selected from glutamic acid and aspartic acid, R¹ represents a linear or branched alkyl or alkenyl group having from 7 to 21 carbon atoms, and M¹ represents a hydrogen atom, an alkali metal, ammonium, an alkylammonium, an alkanolammonium or a basic amino acid, in a wash composition also comprising (B): a N-long-chain-acyl acidic amino acid or its salt, the acidic amino acid being selected from glutamic acid and aspartic acid; and wherein in formula (1), when X is a

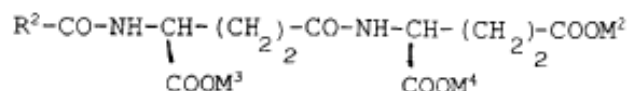
glutamic acid residue, X may be bound to Y through either an α -carbonyl group or a γ -carbonyl group, and when X is an aspartic acid residue, X may be bound to Y through either an α -carbonyl group or a β -carbonyl group, for improving the resistance to hard water of the wash composition comprising (B)."

Dependent claim 2 differs from claim 1 only insofar as the weight ratio of component (A) to component (B) is between 0.1:100 and 20:100.

Claim 3 relates to a wash composition comprising the same components (A) and (B) reported in claim 1 at a weight ratio of component (A) to component (B) of between 5:100 and 20:100.

The independent claim 4 reads as follows:

"4. A N-long-chain-acyl dipeptide represented by formula (2)



wherein R² represents a linear or branched alkyl or alkenyl group having from 7 to 21 carbon atoms, and M², M³ and M⁴, independently from each other, represent a hydrogen atom, an alkali metal, ammonium, an alkylammonium, an alkanolammonium or a basic amino acid or its salt."

The set of claims according to the **first auxiliary request** differs from that according to the main request only insofar as claim 4 has been deleted.

The set of claims according to the **second auxiliary request** differs from that according to the main request only insofar as claim 3 specifies that the weight ratio of component (A) to component (B) is between 10:100 and 20:100.

VI. The Appellant submitted in writing and orally that

- it had been proved in document (1) that the methods of preparation of N-lauroyl-glutamic acid (an acylglutamate hereinafter referred to as **ACG**) known from documents (3) to (5) led inevitably to the formation of by-products;

- moreover, it had been also proved by means of analytical techniques existing at the publication date of documents (3) to (5) that one of the fractions isolated from the **ACG** prepared following the teaching of the prior art documents (the so-called **isomeric mixture**) contained two by-products having a molecular weight greater than **ACG**;

- by considering the result of the mass spectroscopy and of the elemental analysis of the isolated **isomeric mixture** containing these two by-products, the skilled person would have recognised that these by-products could be only two isomeric **ACGG** dipeptides, one of them having the formula of the product of claim 4;

- this finding was confirmed by the experimental report of document (2);

- therefore, the methods of preparation disclosed in documents (3) to (5) led inevitably to the formation of a compound having a formula in accordance with that of claim 4;

- the subject-matter of claim 4 according to the main request or to the second auxiliary request thus lacked novelty (see T 666/89 (OJ 1993, 495));

- moreover, if the skilled person would not have been able to identify such by-products at the publication date of the cited documents, he would have been certainly able to identify them by more modern methods available at the priority date of the patent in suit;

- therefore, even if the subject-matter of said claim 4 would be found to be novel, it would lack at least inventive step.

No objections of lack of novelty or inventive step were raised against the subject-matter of claims 1 to 3 according to the main request and the first and second auxiliary requests.

VII. As regards Article 123(2) EPC the Respondent submitted orally that the examples of the patent in suit related to dipeptides (A) of formula (1) having alkyl chain lengths covering the whole range indicated in the formula of claim 3.

Therefore, the weight ratio of 5:100 of component (A) to component (B) used in the examples was not particularly associated to a restricted type of component (A) having a specific alkyl chain length but was generally applicable to any component (A) encompassed by claim 3.

Claim 3 according to the main request and to the first auxiliary request thus complied with the requirements of Article 123(2) EPC.

Moreover, referring to decision T 2/81 (OJ 1982, 394), the Respondent had submitted in writing that the modified weight ratio of component (A) to component (B) of claim 3 according to the second auxiliary request was supported by the description and complied with the requirements of Article 123(2) EPC.

As regards novelty and inventive step the Respondent submitted in writing and orally *inter alia* that

- document (2), submitted with the statement of the grounds of appeal, had not been mentioned at all in such a statement; therefore, this document had not to be admitted;
- documents (3) to (5) concerned only the preparation of amino acids such as **ACG** by means of the Schotten-Baumann reaction and they neither mentioned the formation of a dipeptide such as **ACGG** nor suggested which compounds could have been formed as by-products;
- in the experimental report (1), the **ACGG isomeric mixture** allegedly obtained by reworking some examples

of documents (3) to (5) had not been separated into its individual components and the product of claim 4 had not been individually isolated;

- moreover, document (1) did not show convincingly that the alleged **ACGG isomeric mixture** contained a dipeptide as claimed and that the Schotten-Baumann reaction carried out following the teaching of documents (3) to (5) would necessarily lead to the formation of such a dipeptide as by-product;

- therefore, it had not been established beyond all reasonable doubt that the dipeptide of claim 4 was an inevitable result of the methods of preparation disclosed in documents (3) to (5) (see T 793/93);

- the product of claim 4 thus was novel over the cited prior art;

- since it was undisputed that the addition of a dipeptide of the type of claim 4 to a wash composition comprising a component of type (B) brought about an unexpected technical effect, the subject-matter of claim 4 also involved an inventive step.

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

IX. The Respondent requests that the appeal be dismissed or, in the alternative, that the patent be maintained on the basis of any of the auxiliary requests submitted with letter of 17 October 2007.

Reasons for the Decision

1. Respondent's main request and first auxiliary request

1.1 *Article 123(2) EPC*

1.1.1 According to Article 123(2) EPC, a European patent application or a European patent may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed.

In this respect it is the established case law of the Boards of Appeal of the EPO that the relevant question to be decided in assessing whether an amendment adds subject-matter extending beyond the content of the application as filed is whether such an amendment was directly and unambiguously derivable from the application as filed (Case Law of the Boards of Appeal of the EPO, 5th edition, 2006, III.A.2 and 2.1).

Claim 3 according to both the main request and the first auxiliary request contains as a technical feature of the claimed wash composition that the weight ratio of component (A) to component (B) is between 5:100 and 20:100.

It is undisputed that the original documents of the application disclose for such a wash composition that "The weight ratio...is preferably between 0.1:100 and 20:100, more preferably between 0.5:100 and 10:100." (page 10, lines 18 to 20) and do not report explicitly that the lower limit of such a range in the wash composition of the invention can be of 5:100.

However, the test examples 1 to 5 of the application, disclose wash compositions of the invention consisting of components (A) and (B) at a weight ratio of 0.5:100, 5:100 or 10:100 (see tables 1 to 3, 5 to 8, 11 and 12).

It thus has to be evaluated whether the specific weight ratio of 5:100 disclosed only in these examples can be considered to be a generic disclosure directly and unambiguously applicable to any wash composition of the invention.

1.1.2 The Board remarks that the above mentioned tables relate to wash compositions containing one component (B) selected from two N-cocoyl glutamates and two N-lauroyl aspartates in combination with one component (A) selected from lauroyl- α -glutamylglutamic acid (tables 1, 5, 8, 11 and 12), lauroyl- γ -glutamylglutamic acid (table 2), lauroyl- α -aspartyl aspartic acid (table 3), stearoyl- α -glutamyl glutamic acid (table 6) and cocoyl- α -aspartyl aspartic acid (table 7).

The components (A) of these examples thus represent in the Board's view a small part of all possible compounds encompassed by the general formula (1) of claim 3, which formula includes linear or branched alkyl or alkenyl groups having from 7 to 21 carbon atoms and any combination of glutamic and aspartic acids residues; moreover, these examples concern also a very small part of all possible components (B), an N-long-chain-acyl acidic amino acid wherein the acidic amino acid is selected from glutamic acid and aspartic acid.

The Board remarks also that the above mentioned examples do not contain a specific indication that a

weight ratio of 5:100 is especially desirable for realising the invention.

Moreover, the compositions of the examples with a weight ratio of 5:100 are shown to be somewhat better in different aspects such as lathering properties, scum adhesion and creaking feeling than the compositions having a lower ratio of 0.5:100 (see tables 1 to 3 and 5 to 8) or to have similar odour and turbidity characteristics (tables 11 and 12); however, the latter compositions are also part of the invention of the original application and are shown, in fact, to be better than compositions not containing component (A).

Therefore, in the Board's view there is a clearly recognisable functional relationship among a weight ratio of 5:100 and the selected pairs of components (A) and (B) of the examples but no generic information about the behaviour of other compositions of the invention different from those exemplified and having the same weight ratio of component (A) to component (B) of 5:100.

The weight ratio of 5:100 thus cannot be seen to be not so closely associated with the other features of the examples as to determine the effect of that embodiment of the invention to a significant degree (see e.g. T 201/83, point 12 of the reasons).

The Board thus finds that the examples cannot amount to a generic disclosure of the weight ratio of 5:100 directly and unambiguously applicable to any possible wash composition encompassed by claim 3.

Moreover, such a weight ratio of 5:100 is a technical feature which provides a technical contribution as explained above; therefore, the introduction into claim 3 of such a limiting feature not disclosed in the original documents of the application in combination with all the embodiments covered by the extent of that claim provides to the Respondent an unwarranted advantage (see G 1/93, point 16 of the reasons).

The Board concludes that each claim 3 according to the main request and to the first auxiliary request do not comply with the requirements of Article 123(2) EPC.

2. Second auxiliary request

2.1 *Articles 123(2) and (3) EPC*

The weight ratio of component (A) to component (B) in claim 3 according to the second auxiliary request is between 10:100 and 20:100.

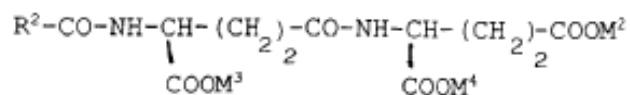
This range is supported by the original disclosure "The weight ratio...is preferably between 0.1:100 and 20:100, more preferably between 0.5:100 and 10:100." (page 10, lines 18 to 20) (see T 2/81, point 3 of the reasons).

The Board is also satisfied that claims 1, 2 and 4 comply with all the requirements of Article 123(2) EPC and that claims 1 to 4 comply with the requirements of Article 123(3) EPC.

Since the Appellant did not raise any objection in this respect no details need to be given.

2.2 Novelty

2.2.1 The subject-matter of claim 4 concerns a compound of formula



wherein R^2 represents a linear or branched alkyl or alkenyl group having from 7 to 21 carbon atoms, and M^2 , M^3 and M^4 , independently from each other, represent a hydrogen atom, an alkali metal, ammonium, an alkylammonium, an alkanolammonium or a basic amino acid or its salt.

It is the established case law of the Boards of Appeal of the EPO with respect to novelty of chemical compounds that a prior art document describing a process of preparation which **inevitably** results in a product which is not described in that prior art document nevertheless destroy the novelty of such an undisclosed product (T 666/89, point 6 of the reasons and T 12/81, OJ 1982, 296, head note 1).

2.2.2 It is undisputed that documents (3) to (5) disclose methods of preparation of amino acids such as **ACG** by means of the Schotten-Baumann reaction and that these documents do not teach anywhere which by-products are formed during this reaction and which kind of by-products are still present in the final isolated amino acids.

In the attempt to show that the reactions disclosed in the prior art documents inevitably lead to the formation of a compound corresponding to that of the formula of claim 4, the Appellant has reworked the preparation of N-lauroyl-DL-glutamic acid by procedure 2 and that of N-lauroyl-L-glutamic acid according to the teaching of document (3) (page 160) as well as examples 1 of documents (4) and (5) relating to the preparation of a similar **ACG**. This experimental reworking is contained in document (1) (pages 3 to 6).

Document (2), a further experimental report submitted with the statement of the grounds of appeal relates to the preparation and characterization of a product obtained by a reaction apparently similar to those of the cited prior art documents (see page 2, lines 2 and 3). However, this document does not identify the process conditions used and the specific process steps leading to the recovering of the product. Therefore, it is not possible to assume that the process of document (2) corresponds exactly to any of the processes disclosed in documents (3) to (5).

The Board thus finds that this document is useless for the purpose of evaluating the disclosure of document (3) to (5) and has to be disregarded. There is therefore no need to decide upon its admissibility as requested by the Respondent.

- 2.2.3 It is undisputed that document (1) shows that the resulting **ACG** product of the methods of preparation described in documents (3) to (5) still contains by-products or impurities.

In particular, document (1) shows by means of chromatographic methods (see, for example, annex 2c) that the recovered end products contain a so-called **isomeric mixture** which was determined by mass spectroscopy (annex 4a) and elemental analysis to have a higher molecular weight than the **ACG** explicitly disclosed in the prior art documents (see also pages 14 to 17 and page 20, lines 8 to 15 of document (1)).

According to the Appellant's submission the skilled person, considering the results of the used chromatographic methods and of the elemental analysis and mass spectroscopy of the isolated **isomeric mixture**, would have recognised that this fraction contained two by-products and that their only possible structural formula corresponded to two **ACGG** isomers, one of them being the product corresponding to the formula of claim 4.

2.2.4 The Board remarks that the analytical investigation of document (1) with regard to the so-called **isomeric mixture** concerns an unknown mixture of compounds and that it has not been further separated into its single components (page 20, lines 12 to 13).

Moreover, in the Board's view, the skilled person would not have assumed with absolute certainty that the appearance during chromatography of two spots belonging to the **isomeric mixture** (see annex 2c) means necessarily that only two compounds are present in this mixture and not, for example, two groups of compounds.

Furthermore, the elemental analysis, the mass spectroscopy and the melting or decomposition point of

an unknown mixture of compounds cannot identify with absolute certainty a single compound contained in such a mixture and they could enable only to formulate a hypothesis about the possible structural formulae of possible compounds contained therein, which hypothesis still need to be investigated and definitively confirmed.

However, document (1) does not contain any further analytical investigation apt to elucidate the structural formula of the compounds contained therein.

The Appellant's conclusion thus amounts only to a hypothesis of the possible structural formula of the compound or compounds contained in the **isomeric mixture** but it cannot be considered as a proof that the above mentioned isolated fraction contains exactly the two compounds alleged.

Therefore, the Board finds that it has not been established beyond all reasonable doubt that the dipeptide of claim 4 is contained in said **isomeric mixture** and that it is an inevitable result of the methods of preparation disclosed in documents (3) to (5) (see e.g. T 793/93, point 2.1 of the reasons).

The Board concludes that the subject-matter of claim 4 is novel over the cited prior art.

2.2.5 The Appellant did not raise any novelty objection against the subject-matter of claims 1 to 3.

The Board thus finds no reason to depart from the finding of the first instance department that such claims are novel over the cited prior art.

No details are further necessary.

2.3 Inventive step

- 2.3.1 As found in the decision of the department of first instance, the prior art is silent about the technical problem addressed to in the patent in suit, of improving the resistance to hard water of wash compositions containing an amino acid of formula (B) (see paragraph 9 of the patent in suit).

This technical problem has been convincingly solved in the patent in suit by means of the addition of a dipeptide of type (A), for example of that of claim 4 (see especially tables 5 to 8).

This has not been contested by the Appellant.

Therefore, since the cited prior art did not contain a suggestion leading to the solution of the above mentioned technical problem and it had not been shown that the skilled person could have arrived to this solution by means of his common general knowledge, the claimed subject-matter involves an inventive step.

- 2.3.2 The Board remarks also that the Appellant did not raise any objection of lack of inventive step in writing and that the only arguments submitted during oral proceedings concerned the possibility for the skilled person to identify the product of claim 4 in the

isomeric mixture of document (1) by methods available at the priority date of the patent in suit.

The Board remarks however, that document (1), as explained above, does not contain a proof that the product of claim 4 is an inevitable result of the methods of preparation disclosed in documents (3) to (5) and does not discuss the technical problem solved by the invention.

Therefore, this argument cannot have any relevance with regard to the issue of inventive step.

The Board concludes that the claimed subject-matter involves an inventive step.

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 with the order to maintain a patent with the following documents:
 - claims 1 to 4 of the second auxiliary request;
 - a description to be adapted.

The Registrar:

The Chairman:

G. Rauh

P.-P. Bracke