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**Datasheet for the decision  
of 18 September 2019**

**Case Number:** T 1179/16 - 3.3.06

**Application Number:** 09718705.8

**Publication Number:** 2271737

**IPC:** C11D3/00, C11D1/645, C11D3/10,  
C11D3/48

**Language of the proceedings:** EN

**Title of invention:**  
CLEANING COMPOSITION

**Patent Proprietor:**  
Amity Limited

**Opponents:**  
LONZA LTD  
LABORATOIRES ANIOS

**Headword:**  
Disinfection composition/Amity Ltd.

**Relevant legal provisions:**  
EPC Art. 54, 56

**Keyword:**

Novelty - main request (no) - auxiliary request (no)  
Inventive step - reformulation of the technical problem -  
improvement not credible - obvious alternative

**Decisions cited:**

T 0708/05

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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Case Number: T 1179/16 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 18 September 2019**

**Appellant:**  
(Patent Proprietor)

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**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted on 8 March 2016  
revoking European patent No. 2271737 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman**            J.-M. Schwaller  
**Members:**            S. Arrojo  
                              J. Hoppe

## Summary of Facts and Submissions

I. In its statement of grounds of appeal the patentee (from now on "the appellant") requested to set aside the decision of the opposition division - to revoke European patent Nr. 2 271 737 - and to maintain the patent as granted or, auxiliary, in amended form on the basis of one of auxiliary requests 1-6 filed therewith.

II. Claim 1 as granted (main request) reads: *"An aqueous surface cleaning and disinfecting composition comprising a long-chain alkyl polyamine compound, a long-chain quaternary ammonium salt, and a metal carbonate salt, characterised in that the composition has a pH in use of at least 11."*

Claim 1 of auxiliary request 1 differs therefrom in that the composition *"further comprises an alkanol amine"*.

Claim 1 of auxiliary request 2 corresponds to that of auxiliary request 1 wherein *"the weight ratio of the long-chain quaternary ammonium salt to the metal carbonate salt is between 3:1 and 1:1"*.

Claim 1 of auxiliary request 3 corresponds to that of auxiliary request 2 wherein the feature alkanol amine is restricted to an *"ethanol amine"*.

Claim 1 of auxiliary request 4 corresponds to that of auxiliary request 3 wherein the feature metal carbonate salt is restricted to *"potassium carbonate"*.

Claim 1 of auxiliary request 5 corresponds to that of auxiliary request 4 wherein the composition *"further*

*comprises a sequestering agent, a long-chain alkyl polyethoxylate compound, and an anti-corrosive agent being benzotriazole".*

Claim 1 of auxiliary request 6 reads: *"A method of cleaning and disinfecting a substrate, characterised in that it comprises the steps of providing a cleaning and disinfecting composition as defined therein and applying it to the substrate, wherein the aqueous surface cleaning and disinfecting composition comprises a long-chain alkyl polyamine compound, a long-chain quaternary ammonium salt, and a metal carbonate salt, characterised in that the composition has a pH in use of at least 11, wherein the composition further comprises an alkanol amine, and wherein the weight ratio of the long-chain quaternary ammonium salt to the metal carbonate salt is between 3:1 and 1:1."*

- III. In its reply, opponent 1 (from now on "respondent 1") argued that the subject-matter of claim 1 of the main and first auxiliary requests lacked novelty in view of example 1 of document D2 (WO 03/059062 A1) and that claim 1 of auxiliary requests 2-6 were not inventive when starting from example 1 of document D2 as closest prior art.
- IV. The Board issued a communication to inform the parties of its preliminary opinion that the main request and auxiliary request 1 did not appear to comply with the requirements of Article 54 EPC and that auxiliary requests 2-6 did not appear to comply with the requirements of Article 56 EPC.
- V. Oral proceedings were held. After closure of the debate, the requests of the parties were as follows:

The **appellant** requested to set aside the decision of the opposition division and to maintain the patent as granted or, auxiliary, in amended form on the basis of auxiliary requests 1-6 filed with the statement of grounds of appeal.

The **respondents** (opponent 1 and opponent 2) requested that the appeal be dismissed.

### **Reasons for the Decision**

#### 1. Main Request - Novelty

1.1 The Board has concluded that the ground under Article 100(a) EPC in combination with Article 54 EPC prejudices the maintenance of the patent as granted (main request).

1.2 Example 1 of document D2 discloses a disinfecting/cleaning composition including all the components defined in claim 1, namely:

- 5.0% didecyldimethylammonium chloride (50% solution) (i.e. a long-chain quaternary ammonium salt),
- 2.0% N,N-bis-(3-aminopropyl)dodecylamine (i.e. a long chain alkyl polyamine),
- 5.0% monoethanolamine,
- 5.0% Genapol® T250 (tallow fatty alcohol polyglycol ether, 25 mol ethylene oxide),
- 0.5% sodium metasilicate,
- 0.5% sodium carbonate (i.e. a metal carbonate) and 2.0% Trilon® M (40% solution of methylglycine diacetic acid trisodium salt).

1.3 Since no reference is made in document D2 to the pH of the composition of example 1, both the appellant and

respondent 1 respectively filed a test report measuring the pH of that composition.

According to the experimental data submitted by the appellant (see test report filed on 18 July 2014) a composition corresponding to that of example 1 of D2 at a dilution of 1% would give rise to a pH of 10.8. The board however notes that, contrary to the disclosure of document D2, the composition in this test was made using deionised water buffered to pH 7.

On the other hand, according to the test report D7 filed with the notice of opposition of opponent 1 dated 22 January 2014, the composition according to example 1 of D2 would give rise to pHs from 11.42 to 12.13 in dilutions ranging from 0.5 % to 5 %, wherein at a 1% dilution the pH would be 11.65.

1.4 The Board does not accept appellant's argument that its test report establishes the novelty of the subject-matter of claim 1 as granted over the composition of example 1 of document D2 for the following reasons:

1.4.1 The use feature (i.e. "*the pH in use*") in claim 1 at issue does not limit the scope of protection of composition claim 1, since the pH value of a composition "*in use*" could potentially be affected by a number of factors which are not defined in claim 1, such as the degree of dilution, the substrate on which the composition is used and/or other substances mixed with or in contact with the composition while in use. Under such circumstances, a composition could have virtually any pH "*in use*", which implies that this feature does not limit the claimed scope of protection and cannot be considered to establish novelty with respect to D2.



- 1.4.2 If, for the sake of argument, it were considered that the term "*in use*" refers to different degrees of dilution of the composition (in-line with paragraph [0062] of the patent in suit), the subject-matter of claim 1 would still encompass compositions giving rise to a pH of at least 11 at any dilution ratio. Since it is apparent from D7 that the composition of example 1 of D2 has a pH value over 11 at least for some dilution ratios, claim 1 would anyway be anticipated by example 1 of document D2.
- 1.4.3 In this respect, the board finds the probative value of the test submitted by the appellant to be questionable because the use of deionised water buffered to 7 to reproduce the composition of example 1 of D2 at a dilution of 1% is not representative of that composition and inevitably led to a lowering of the measured pH value (a fact which would explain the differences observed with respect to the pH of 11.65 obtained by respondent 1 for the same dilution ratio).
- 1.4.4 It is also noted for the sake of completeness that according to the jurisprudence of the boards of appeal (see for example reason 3 of T 0708/05), a pH of 11 (without decimals) effectively encompasses all pH values which would round-up to 11 in the absence of decimals (i.e. 10.5-11.4).

The appellant argued that this approach should not be used for pH values, because the change of properties associated to a pH variability of +/- 0.5 would be too significant.

The Board is however of the opinion that it is the patentee who determines the degree of preciseness required for each parameter when drafting the patent.

Thus, in the present case the absence of decimals when referring to the pH range effectively implies that the preciseness of that parameter was not considered to be critical when drafting the patent.

1.5 Consequently, example 1 of D2 anticipates the subject-matter of claim 1.

2. Auxiliary request 1 - Article 54 EPC

2.1 The Board has concluded that auxiliary request 1 is not allowable under Article 54 EPC.

2.2 Since the composition of example 1 in document D2 includes 5.0% of monoethanolamine (i.e. an alkanol amine), the argumentation presented for claim 1 of the main request also applies to claim 1 of this request, which is therefore not considered to be novel in view of document D2.

3. Auxiliary request 2 - Inventive step

3.1 The Board, applying the problem-solution approach, has concluded that auxiliary request 2 does not comply with the requirements of Article 56 EPC.

3.2 Closest prior art

All the parties acknowledged the composition disclosed in example 1 of document D2 as representing the closest prior art because its purpose is similar to that of the underlying invention and includes all the components defined in claim 1.

The subject-matter of claim 1 at issue differs from this composition in that the weight ratio of long-chain

quaternary ammonium salt to the metal carbonate salt is between 3:1 and 1:1 (in example 1 of D2 it is 5:1).

3.3 Problem solved and success of the solution

- 3.3.1 According to paragraph [0011] of the patent in suit, the problem underlying the invention is *"to provide a cleaning composition for hard surfaces, medical devices and instruments, surgical implements or the like which has bactericidal, virucidal, fungicidal and sporicidal properties, while obviating the (...) disadvantages of existing compositions [and] (...) to provide such a composition that may be used on soft surfaces."*

In this respect, the appellant argued that the example and the tests in the patent in suit (paragraphs [0059]-[0076]) provided evidence that the composition according to claim 1 required shorter times for disinfection in comparison with those disclosed in example 1 of D2.

- 3.3.2 The board cannot agree with this argumentation, because there is no disclosure or suggestion in the patent that the observed effects were associated to the ratio of quaternary ammonium salt to metal carbonate salt. This feature is moreover simply presented, among a multitude of others (see paragraphs [0043]-[0045]), as a preferred embodiment without any indication as to the technical effects associated therewith.

Furthermore, while the tests in the patent in suit relate to one specific composition, the subject-matter of claim 1 omits any reference to aspects which are arguably technically critical for the alleged effects such as the concentration ranges of the components. Therefore, it is at least technically not plausible

that a composition characterised by the claimed ratio only, and which thus effectively encompasses very low concentrations of the quaternary ammonium salt, would indeed be capable of providing the alleged technical effects of improving the disinfection performance.

3.3.3 The Board therefore considers that the solution defined in claim 1 does not successfully solve the technical problem specified in the patent in suit, at least on the whole breadth of its scope of protection, with the consequence that the problem is to be reformulated in the less ambitious terms of providing an alternative cleaning and disinfecting composition.

3.4 Obviousness of the proposed solution

3.4.1 The skilled person is aware that the performance of some disinfecting substances such as the quaternary ammonium salt in the compositions of examples 1 and 20 of D2 is affected by the pH of the composition, which therefore needs to be adjusted to ensure an efficient disinfection.

3.4.2 The composition in example 1 of D2 includes two kinds of basic sodium salts to adjust the pH: 0.5% of sodium carbonate and 0.5% of sodium metasilicate (the metasilicate being a stronger base than the carbonate). By contrast, the composition according to example 20 of D2 includes a higher concentration of metal carbonate (5.0%) but no sodium metasilicate. Since both examples include a quaternary ammonium salt and this substance is arguably one of the key components for obtaining the desired disinfecting results (see page 1, lines 3-5 of D2), the skilled person would regard the different combinations of basic salts used to reach the desired pH (arguably similar in both cases in order to optimise

the performance of the quaternary ammonium salt) as obvious alternatives. While these examples also use different concentrations of quaternary ammonium salt (5.0% of a 50% solution in example 1 vs. 9.9% of a 70% solution in example 20), it is considered to be customary to test compositions having different amounts of active substances.

By incorporating both the concentrations of quaternary ammonium salt and of the basic salts of example 20 into the composition of example 1, the quaternary ammonium salt to metal carbonate ratio would be reduced to 1.4:1, which falls within the range defined in claim 1.

The Board has therefore concluded that, when looking for alternative compositions, it would be obvious for a skilled reader to modify the composition of example 1 of D2 in view of the one of example 20 of D2, and that in doing so a composition falling within the scope of claim 1 would be obtained without exercising any inventive skills.

3.4.3 The appellant argued that there was no suggestion in document D2 to modify the ratio of quaternary ammonium salt to metal carbonate salt in the composition of example 1, let alone to do it in a way which would anticipate the ratio defined in claim 1. No evidence would have been presented to support the argument that modifying this ratio was part of the common general knowledge, and even if the skilled person considered the possibility of exploring different alternative compositions, the claimed ratio would not be reached in a one-way street situation because there were a large number of modifications which could be considered instead.

3.4.4 The Board cannot follow this argument, because the question of whether a skilled person would consider a modification of the prior art critically depends on the problem solved by the alleged invention. On the one hand, if an invention solves a specific technical problem, a solution in the prior art should only be regarded as obvious when it is explicitly or implicitly linked to that particular problem or when there is a one-way street situation. On the other hand, if the only contribution of the invention is to propose something different from the prior art (i.e. the provision of an alternative), then it is usually appropriate to consider that the skilled reader would take into account any alternative known in the underlying technical field (unless the closest prior art teaches away from it). In such cases it might not be required to justify the selection of a particular solution, because it is assumed that an invention based on incorporating known features for the sole purpose of establishing novelty must be rendered obvious by a corresponding step of selecting any alternative known in the art.

In the underlying case, all which needs to be justified is that the combination of disclosures (i.e. examples 1 and 20 in D2) would represent a technically reasonable consideration for the skilled reader, with no further need to justify why the specific combination would be selected (e.g. rather than other alternatives), because this selection step is considered to involve the same degree of inventiveness as that required to define a range of ratios of quaternary ammonium salt to metal carbonate salt for the sole purpose of providing an alternative composition.

4. Auxiliary request 3 - Inventive step

4.1 The Board has concluded that this request does not comply with the requirements of Article 56 EPC.

4.2 Since the composition of example 1 in D2 also includes ethanol amine, the arguments and conclusions presented for claim 1 of auxiliary request 2 also apply to present claim 1, which is therefore not considered to be inventive in view of document D2.

5. Auxiliary request 4 - Inventive step

5.1 The Board has concluded that auxiliary request 4 does not comply with the requirements of Article 56 EPC.

5.2 In example 1 of D2, which is regarded as the closest prior art, the metal carbonate salt is sodium carbonate. Since the Board could not find any evidence or argument - the appellant did not provide any at the oral proceedings and in writing it referred to the discussion of the second auxiliary request - supporting a specific technical effect associated to the presence of potassium carbonate in the claimed composition, the problem solved by the alleged invention can only be that of providing an alternative cleaning/disinfecting composition.

5.3 Sodium and potassium carbonates are generally regarded as functionally equivalent, so unless otherwise specified, using one or the other is a matter of obvious choice for the person skilled in the art. Furthermore, example 20 in document D2 proposes a composition including potassium carbonate (instead of sodium carbonate) and having a ratio of quaternary

ammonium salt to metal carbonate salt falling within the claimed range.

5.4 The Board thus considers that the argumentation presented for auxiliary request 2 applies also to this request, which implies that the subject-matter of claim 1 is not inventive in view of the combined disclosures of examples 1 and 20 of D2.

6. Auxiliary request 5 - Inventive step

6.1 The Board has concluded that auxiliary request 5 does not comply with the requirements of Article 56 EPC.

6.2 Closest prior art

The composition in example 1 of document D2 includes Genapol<sup>®</sup> T250 (i.e a long-chain alkyl polyethoxylate), Trilon<sup>®</sup> M (a sequestering agent) and sodium metasilicate (a known anti-corrosive agent according to page 4 of document D23 (PQ Corporation, "Metso Sodium Metasilicate", 2009)). Consequently, the only additional differentiating feature is the selection of benzotriazole as anti-corrosive agent.

6.3 Problem solved

6.3.1 According to the patent in suit (paragraph [0072]), the composition in the example of paragraph [0059] of the patent "surprisingly" inhibits corrosion even at high pH values and low concentrations of benzotriazole.

6.3.2 There is however no evidence on file comparing the anti-corrosive performance of benzotriazole with that of other anti-corrosive agents known in the field. The appellant has also not contested either in writing or



during oral proceedings the arguments brought forward by the respondents and by the Board (in its communication dated 13 February 2019), according to which benzotriazole was to be considered as a well-known anti-corrosive agent and as an obvious alternative to the metasilicate salt in example 1 of D2.

6.3.3 In the absence of either evidence or additional arguments from the appellant, the Board must conclude that the only problem solved by the selection of benzotriazole as anti-corrosive agent is that of providing an alternative cleaning/disinfecting composition.

6.4 Obviousness

6.4.1 Page 388 of document D6 (Römpp Chemie Lexikon, 9. Auflage, Band 1 (1989)) indicates that the main use of "benzotriazole" is as anti-corrosive agent, in particular for surfaces including copper. Since example 1 of D2 includes metasilicate salt, which is also a known anti-corrosive agent, it would be obvious for the skilled person to consider the use of benzotriazole as an alternative to metasilicate. This argumentation is also compatible with the combination of the teachings of examples 1 and 20 of D2, in particular when the higher concentration of potassium carbonate salt proposed in example 20 is used to substitute the sodium carbonate and the metasilicate salts used in example 1 (i.e. benzotriazole would then be added to compensate for the removal of metasilicate salt).

6.5 The Board therefore concludes that the subject-matter of claim 1 is rendered obvious by the combined disclosures of examples 1 and 20 of document D2.

7. Auxiliary request 6 - Inventive step

7.1 The Board has concluded that auxiliary request 6 does not comply with the requirements of Article 56 EPC.

7.2 Closest prior art

Example 1 of document D2 is regarded as the closest prior art.

The definition of the invention in terms of a method claim wherein a composition is applied (i.e. used) implies that the feature "*a pH in use of at least 11*" limits the scope of protection to methods in which the disinfecting/cleaning composition has a pH equal or higher than 11. That is, unlike in the other requests, the subject-matter of claim 1 does not encompass compositions which could (i.e. either as concentrates or at some dilution rates) have a pH of at least 11, but only compositions being applied or used within that particular pH range.

7.3 The appellant argued that example 1 of document D2 did not disclose the use of a composition having a pH within the defined range.

7.4 According to example 1 of document D2 the efficiency of the composition was tested (i.e. used in a method for disinfecting a substrate) at a dilution of 1%.

As argued in points 1.4.2-1.4.4 *supra* the Board considers that the test report D7 demonstrates that the pH of the composition of example 1 at a dilution of 1% is at least 11. Thus, the additional restriction of the method claim to a pH of at least 11 does not represent

a differentiating feature with respect to example 1 of D2.

7.5 Since claim 1 is otherwise equivalent to that of auxiliary request 2, it follows that the same argumentation and conclusions as presented for that request apply also in the present case, which implies that claim 1 is not inventive in view of the combined disclosures of examples 1 and 20 of D2.

8. As the appellant has not succeeded in showing that the claims of any of the requests on file meet the requirements of the EPC, the decision of the opposition division becomes final.

## Order

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

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated