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**Datasheet for the decision  
of 3 November 2015**

**Case Number:** T 0038/14 - 3.3.06

**Application Number:** 05715441.1

**Publication Number:** 1720964

**IPC:** C11D3/38, C11D3/02

**Language of the proceedings:** EN

**Title of invention:**  
POLYMER BOUND MANGANESE COMPOUNDS IN CLEANING COMPOSITION

**Patent Proprietor:**  
Dalli-Werke GmbH & Co. KG

**Opponent:**  
Henkel AG & Co. KGaA

**Headword:**  
Manganese proteinate/DALLI

**Relevant legal provisions:**  
EPC Art. 52(1), 54(1), 54(2), 56

**Keyword:**  
Novelty - main request (yes)  
Inventive step - non-obvious modification

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
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Chambres de recours**

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Case Number: T 0038/14 - 3.3.06

**D E C I S I O N  
of Technical Board of Appeal 3.3.06  
of 3 November 2015**

**Appellant:** Henkel AG & Co. KGaA  
(Opponent) Henkelstrasse 67  
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**Representative:** Henkel AG & Co. KGaA  
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**Respondent:** Dalli-Werke GmbH & Co. KG  
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**Representative:** f & e patent  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 12 November  
2013 rejecting the opposition filed against  
European patent No. 1720964 pursuant to Article  
101(2) EPC.**

**Composition of the Board:**

**Chairman** B. Czech  
**Members:** E. Bendl  
C. Heath

## Summary of Facts and Submissions

- I. The appeal lies from the decision to reject the opposition against the European patent No. 1 720 964.
- II. Independent claims 1 and 4 of the patent as granted read as follows:
- "1. Use of a manganese proteinate in a cleaning process."*
- "4. A machine dishwashing cleaning composition comprising a manganese proteinate and being in the form of a tablet or a granulate."*
- III. In the appealed decision the opposition division found that the subject-matter of the claims as granted was novel vis-à-vis documents D1 (WO 96/41860 A1), D2 (US 3 969 540 B) and D3 (DE 43 14 397 A1). The claimed invention was not obvious taking D3 as the closest prior art, optionally in combination with D1 or D2.
- IV. In its statement of grounds of appeal the appellant (opponent) cited two additional documents, referred to as D5 and D6, and argued that the subject-matter of the claims as granted lacked novelty over each of D1, D5 and D6, and was not inventive having regard to D3 in combination with either of D5, D6 or D2.
- V. In its reply of 31 July 2014 the respondent (patent proprietor) rebutted the appellant's arguments, but nevertheless filed nine sets of claims as auxiliary requests 1 to 9. It submitted the following:
- D5 and D6 were not to be admitted into the proceedings in view of their late filing and lack of relevance, the latter being confirmed by a further

- document labelled D7 submitted with this letter.
- No evidence had been provided showing that manganese proteinate was present in the enzyme-containing granulate referred to in D1.
  - Taking D3 as the closest prior art, the claimed subject-matter was not obvious.
- VI. The parties were summoned to oral proceedings, and in preparation therefor the board issued a communication addressing *inter alia* novelty and inventive step issues.
- VII. In response thereto the respondent, in its letter of 1 October 2015, maintained its position concerning the inadmissibility of D5 and D6. With the same letter, it re-submitted auxiliary claim requests 5 to 8, but in a different order (re-numbered), and an additional set of claims as auxiliary request 10.
- VIII. In the course of the oral proceedings held on 3 November 2015, the respondent first turned its pending auxiliary request 5 into its new main request, which was subsequently replaced by a slightly amended version of claim 2.

The independent claims of the final, amended main request submitted during the oral proceedings read as follows:

"1. *Use of a manganese proteinate in a cleaning process which is machine dishwashing.*"

"2. *Use of a manganese proteinate for silver protection in a cleaning process.*"

"4. *A machine dishwashing cleaning composition*

*comprising a manganese proteinate and being in the form of a tablet or a granulate."*

Claims 3, 5 and 6 are dependent on claims 2 and 4, respectively, and define preferred embodiments thereof.

The objections and arguments presented regarding this request only concerned

- the meaning of the term "*manganese proteinate*",
- novelty over D1 and
- inventive step starting taking D3 as the closest prior art, either taken alone or considering also D2 or D1.

The appellant expressly no longer requested the admission and consideration of D5 and D6.

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

The respondent requested that the patent be maintained on the basis of the main request filed during the oral proceedings or, in the alternative, that the patent be maintained on the basis of the claims according to one of auxiliary requests 1 to 4 or 9, filed with the grounds of appeal dated 31 July 2014, or of auxiliary requests 6 to 8 or 10, filed with letter of 1 October 2015.

- X. The arguments of the appellant, as far as relevant to the present decision, can be summarised as follows:

Meaning of "*manganese proteinate*"

- In writing (letter of 19 January 2014, paragraph bridging pages 1 and 2), the appellant had argued that an intimate mixture containing a manganese compound and a protein would unavoidably contain

the reaction product of these two ingredients, i.e. a manganese proteinate within the meaning of the patent in suit.

- However, during oral proceedings, it conceded that the manganese proteinate within the meaning of the patent in suit was, technically speaking, a complex.

#### Novelty

- D1 disclosed granules comprising a manganese salt and an enzyme, i.e. a protein, in intimate admixture. It was unavoidable that some manganese proteinate was formed, although probably not in large amounts.

#### Inventive step

- D3 was the closest state of the art. It was known from D3 to use manganese compounds as silver protection agents. When looking for alternatives to the manganese complexes referred to in D3, the skilled person would inevitably consider using the manganese proteinates disclosed in D2 or D1. Thus, the claimed subject-matter was obvious.

The arguments of the respondent, as far as relevant to the present decision, can be summarised as follows:

#### Meaning of "*manganese proteinate*"

- Manganese proteinate was a synonym for a manganese-protein complex.

#### Novelty

- No proof had been presented by the appellant that under the conditions described in D1 manganese proteinates were actually formed. The possible (hypothetical) presence of a few complex molecules

could not be equated to the intentional addition of manganese proteinate to a cleaning composition or their use in a cleaning process.

Inventive step

- The claimed subject-matter was not obvious, as none of the cited documents referred to the use of manganese proteinate in cleaning preparations, let alone as agent providing silver protection in a cleaning context.

## **Reasons for the Decision**

### *Admissibility of the amended main request*

1. The pending main request was submitted during the oral proceedings. The claims according to this request only differ from the ones according to the request filed as auxiliary request 7 with the reply to the grounds of appeal in that the wording "*use of a manganese proteinate **in a cleaning process for silver protection***" was amended to read "*use of a manganese proteinate **for silver protection in a cleaning process***" (emphasis added).
- 1.1 The auxiliary request 7 had been submitted in reaction to the appellant's objections. The filing of the clarified version (*supra*) of this request submitted as new main request in response to the debate at the oral proceedings did not raise any new issue of particular complexity and was not objected to by the appellant.
- 1.2 Thus, the board decided to admit the amended main request into the procedure although it was only filed at the oral proceedings (Article 114(2) EPC and Article

13(3) RPBA).

*Formal allowability of the claims*

2. The board is satisfied that amendments made comply with the requirements of Articles 84 and 123(2), (3) EPC. Since no objections were raised in this respect by the appellant, detailed reasons need not be given.

*Meaning of the term "manganese proteinate"*

3. At the oral proceedings it was common ground between the parties that manganese proteinates within the meaning of the patent in suit were complexes of a manganese compound and a protein, i.e. that a (chemical) reaction was necessary to obtain them.

Considering, for instance, the indications in document D2 (see point 4.2, *infra*) the board has no reason to take another stance in this respect.

- 3.1 The parties, however, disagreed as to the conditions under which such complexes were formed. According to the appellant they were formed *in situ*, at least in a small amount, by simply mixing of an enzyme with a manganese salt, whereas according to the respondent specific conditions (alkaline pH value, all reactants necessarily in solution, etc.) were required.

*Novelty*

4. D1 discloses granulates containing an intimate mixture of an protease enzyme with a manganese salt, i.e.  $MnSO_4$  (see claims 1 and 9), for silver protection in machine dishwashing (page 2, last paragraph).



The paragraph bridging pages 12 and 13 of D1 discloses that for preparing the granules a fermentation broth containing an enzyme is concentrated, admixed with further components including the silver protection agent, extruded and dried at 40 to 60 °C.

4.1 The appellant took the view that protease/MnSO<sub>4</sub> granules of D1 obtained by this process inherently contained, due to the intimate admixing of the two compounds, at least small amounts of manganese proteinate within the meaning of the patent in suit. Therefore, the claimed subject-matter was not novel.

4.2 The respondent countered this argumentation by pointing to specific conditions needed for forming proteinates, as for instance described in D2 (see column 3, lines 26 *et seq.*). Particular reference was made to lines 38 to 45 of this column reading "*In order to form a true metal proteinate (chelate) one must have the proper amount of constituents at the right conditions. It is essential that the mineral and protein hydrolysate both be in soluble form. It is also important that the protons be removed from the carboxyl groups before chemical bonds with the mineral can be formed.*"

4.3 Considering

- that the appellant did not submit any proof that manganese proteinates within the meaning of the patent in suit (i.e. complexes) were actually formed under the conditions described in D1, and
- that the formation of such complexes required specific conditions as pointed out in D2 (see 4.2, *supra*),

the board concludes that the formation of such manganese-protein-complexes (manganese proteinates) is not directly and unambiguously disclosed in D1.

- 4.4 Thus, the appellant did not convincingly demonstrate that the prior art discloses subject-matter falling within the terms of claims 1, 2, 4 and their dependent claims.
- 4.5 The subject-matter of the claims according to the main request is therefore found to meet the requirement of novelty (Articles 52(1) and 54 EPC).

*Inventive step*

5. The invention

The invention relates to cleaning compositions comprising manganese compounds for machine dishwashing, and to the use of manganese compounds for silver protection in cleaning processes (see claims at issue, point VIII, *supra*).

6. Closest prior art

- 6.1 Considering the similarities between the patent in suit and D3 in terms of objectives and means disclosed, the board considers D3 as the appropriate starting point for the assessment of inventive step. In the appeal proceedings both parties shared this view and argued accordingly.
- 6.2 Indeed, D3 relates to enzyme-containing compositions for machine dishwashing which compositions provide protection of silverware against staining (page 3, lines 13 to 18). As the silver protecting agent, a manganese compound or complexes, e.g.  $\text{MnSO}_4$ , may be used, which is preferably coated in order to avoid its premature oxidation (page 4, lines 45 to 56; page 6,

line 47, to page 8; page 12, line 24, to page 13, line 40).

7. Technical problem

In the light of the teaching of the closest prior art D3, the technical problem can be seen in providing further ways of protecting silver in cleaning applications, in particular machine dishwashing.

8. Solution

To solve the above problem the patent in suit proposes

- the use of manganese proteinate in machine dishwashing (claim 1 at issue),
- for silver protection in a cleaning process (claim 2 at issue), and
- machine dishwashing cleaning composition comprising manganese proteinate (claim 4 at issue).

9. Success of the solution

9.1 The experimental data contained in the patent in suit (see Test 3; paragraphs [0133], [0134] and figures 3.1-1 and 3.1-2) convincingly show that the manganese component is protected against premature oxidation in aqueous solution when it is used in form of a manganese proteinate rather than as  $MnSO_4$ . This was not disputed.

9.2 Thus, the board accepts that the technical problem(s) posed (point 7, *supra*) is(are) solved over the entire ambit of the claims.

10. Obviousness

10.1 It thus remains to be decided whether the proposed

solution was obvious to the skilled person having regard to the state of the art.

10.2 D3 taken alone

10.2.1 D3 refers, like the patent in suit, to the problem of undesirable premature oxidation of a manganese compound contained in a cleaning composition. However, D3 proposes a different solution, namely coating the manganese compound used with a water-tight coating which is easily soluble at the washing temperatures. D3 mentions coating materials like paraffins or waxes (page 4, lines 53 to 58). Manganese proteinate are not mentioned in D3 at all.

10.2.2 Thus, D3 teaches a different way of preserving the manganese compound which necessitates modifying it by coating it with a component having controlled properties. Hence D3 taken alone does not suggest the claimed subject-matter.

10.3 Document D2

10.3.1 D2 relates to the preparation of metal proteinates, like manganese proteinate. The metal proteinates so obtained are intended to be used as dietary supplement for animals (paragraph bridging columns 3 and 4). D2 does neither addresses cleaning compositions, let alone silver protection in cleaning processes, and, in particular, does not concern the protection of a manganese compounds from premature oxidation.

Hence, the board is convinced that without the benefit of hindsight the person seeking to solve the technical problem posed would not consider document D2 at all. Even assuming *arguendo* that he would, he would not be

induced by D2 to replace the coated manganese compounds used according to D3 by manganese proteinate.

10.4 Document D1

10.4.1 D1 (page 1, first paragraph; page 7, first full paragraph) concerns enzymatic detergent granulates for machine dishwashing comprising metal salts and/or complexes as a silver corrosion inhibitor, and discloses *inter alia* granules comprising protease and  $MnSO_4$  (see claim 9). Manganese proteinates are neither mentioned nor implicitly disclosed (see point 4.3, *supra*), and oxidation protection of the manganese compound is not referred to either.

10.4.2 Hence, D1 does not suggest providing the manganese-based silver protection agent in the form of manganese proteinate.

10.5 Therefore, in the board's judgement, the subject-matters of independent claims 1, 2 and 4 and of the dependent claims involves an inventive step and therefore meets the requirements of Articles 52(1) and 56 EPC.

*Conclusion*

11. The claims according to the appellant's main request are allowable.

## Order

### For these reasons it is decided that:

1. The decision of the opposition division is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent with claims 1 to 6 according to the main request filed at the oral proceedings, the figures of the patent as granted and a description to be adapted where appropriate.

The Registrar:

The Chairman:



D. Magliano

B. Czech

Decision electronically authenticated