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**Datasheet for the decision
of 6 July 2023**

Case Number: T 0667/21 - 3.3.06

Application Number: 08747592.7

Publication Number: 2142627

IPC: C11D3/04, C11D3/10, C11D11/00

Language of the proceedings: EN

Title of invention:
METHOD OF CLEANING WITH COMPOSITIONS CONTAINING WATER SOLUBLE
MAGNESIUM COMPOUND

Patent Proprietor:
Ecolab USA Inc.

Opponent:
THE PROCTER & GAMBLE COMPANY

Headword:
Reduction of spotting/Ecolab

Relevant legal provisions:
EPC Art. 100(a), 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:



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Case Number: T 0667/21 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 6 July 2023

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 18 March 2021
revoking European patent No. 2142627 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: S. Arrojo
C. Heath

Summary of Facts and Submissions

- I. The patent proprietor filed an appeal contesting **the decision of the opposition division to revoke European patent No. 2 142 627** under Article 56 EPC (auxiliary requests 1, 2 and 3) in view of **D1** (JP 2005 154716) combined with **D5** (US 5,863,877) and Article 123(2) EPC (auxiliary request 4). Claim 1 as granted (**main request**) reads:

"1. A method of cleaning ware comprising the following steps:

contacting the ware with a composition comprising hard water having a total level of calcium and magnesium ions in excess of 100 ppm expressed in units of ppm CaCO₃, a water soluble magnesium salt, and a mixture of a source of alkalinity and a surfactant, wherein the aqueous composition during contacting comprises magnesium ion in a molar amount equal to or in excess over a molar amount of calcium ion; and recovering the ware with an acceptable amount of hard water spotting, wherein an acceptable amount of hard water spotting comprises up to one quarter of the surface containing spots, and wherein the composition has a pH of between 8 and 10."

Claim 1 of **auxiliary request 1** corresponds to that of the main request with the additional requirement that *"the composition comprises less than 2 wt-% chelating agent"*.

Claim 1 of **auxiliary request 2** corresponds to that of auxiliary request 1 with the additional requirement

that the method of cleaning ware takes place *"in an automatic warewashing or dishwashing machine"*.

Claim 1 of **auxiliary request 3** corresponds to that of auxiliary request 2 with the additional requirement that *"the surfactant is a nonionic low foaming surfactant"*.

Claim 1 of **auxiliary request 4** corresponds to that of auxiliary request 3 with the additional requirement that the *"nonionic low foaming surfactant include [sic] secondary ethoxylates"*.

- II. In its statement of grounds of appeal, the appellant requested that the decision be set aside or, as an auxiliary measure, that the patent be maintained on the basis of the claims according to one of the auxiliary requests 1 to 4 filed during first instance proceedings and resubmitted with the grounds of appeal. Further, it filed a new document D10 (*Handbook for Cleaning/Decontamination of Surfaces, 2007, Chapter 12, Scaling Problems in Home Care Applications, pages 334-338*).
- III. In its reply, the opponent and respondent requested that the appeal be dismissed, arguing that the claims as granted extended beyond the content of the application as filed, were insufficiently disclosed, not novel in view of D6 (WO 99/19440 A1) and not inventive in view of D1 combined with D5, or in view of D6 alone; claim 1 of auxiliary request 1 was not novel in view of D6 and not inventive in view of D1 or D6; claim 1 of auxiliary requests 2 and 3 was not inventive in view of D1 or D6; and claim 1 of auxiliary request 4 extended beyond the content of the application as filed. Further, it requested that document D10 not be admitted into the appeal proceedings.

IV. In its preliminary opinion, the board indicated that none of the requests on file appeared to meet the requirements of Article 56 EPC, because the subject-matter of their respective claim 1 lacked an inventive step in view of the combination of documents D1 and D5.

V. At the oral proceedings, which took place on 6 July 2023, the opponent withdrew its request not to admit document D10 and the parties' final requests were established to be as follows:

The appellant requested that the decision under appeal be set aside and the opposition be rejected or, as an auxiliary measure, that the patent be maintained on the basis of the claims according to one of auxiliary requests 1 to 4 filed with the statement of grounds of appeal on 22 July 2021.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. Admittance of D10

1.1 This document having been filed for the first time with the statement of grounds of appeal, it represents an amendment of the appellant's case and can thus be admitted only at the discretion of the board pursuant to Article 12(4) RPBA.

1.2 In view of the fact that the opponent no longer objects to the admission of this document, and since it was not filed to substantiate new objections but to illustrate the knowledge of a person skilled in the art, the board decided to exercise its discretion under Article 12(4) RPBA to admit D10 into the appeal proceedings.

2. Main request - Inventive step

The board has concluded that the opposition ground under Article 100(a) EPC in relation to Article 56 EPC prejudices the maintenance of the patent as granted for the following reasons:

2.1 Cited prior art

2.1.1 Document **D1b** (EN translation of D1, from now on referred to as D1) discloses (example 66 in table 14) a dishwashing detergent composition comprising a soluble magnesium salt, no calcium salt, an alkalinity source (sodium bicarbonate) and a surfactant, and having a pH between 5.6 and 8.6 (see par. [0137] and the corresponding sign in example 66). The exemplary compositions in D1 are tested for anti-scaling performance with water having a hardness of 250 mg/l and for cleaning performance with water having a hardness of 70-80 ppm (see paras. [0139] and [0141]).

2.1.2 Document D6 discloses detergents for high hardness conditions in manual dishwashing operations (abstract and page 1, lines 1-2), so it implicitly anticipates a method of cleaning ware. D6 indicates (page 27, last paragraph) that due to the properties of the mid-chain branched surfactants of the invention, the water could have a hardness of at least 15 gpg (corresponding to 257 ppm expressed as CaCO_3), and some of the exemplary detergent compositions (composition A in example IX, composition B in example X and composition B in example XI) include a molar amount of magnesium salt higher than the molar amount of calcium salt.

2.2 Closest prior art

While the board tends to agree with the opponent that document D6 might represent a more promising springboard than D1 (at least for the main request and auxiliary request 1), for the sake of the argument it will be assumed (in the appellant's favour) that document D1 represents the closest prior art.

- 2.3 The board agrees with the opposition division that the subject-matter of claim 1 differs from the disclosure in D1 in that:
- i) the cleaning process is carried out with water having a hardness higher than 100 ppm expressed as CaCO_3 ,
 - ii) the molar concentration of magnesium is higher than that of calcium salt, and
 - iii) the pH of the composition (i.e. hard water and cleaning composition) is 8 to 10.
- 2.4 While these differentiating features were not contested by the parties at the oral proceedings, the board will, for the sake of completeness, explain why they cannot be directly and unambiguously derived from document D1:
- 2.4.1 Even though the anti-scaling test in D1 is carried out with a water hardness falling within the claimed range, this test is not a method of cleaning ware in the sense of claim 1. The actual cleaning test in D1 is carried out with water having a hardness of 70-80 ppm (see par. [0139]), which falls outside the hardness range defined in claim 1 at issue.
- 2.4.2 Furthermore, there is insufficient information to conclude that the molar amount of magnesium ions in D1 is higher than that of calcium ions, because while the composition of example 66 includes a magnesium salt and no calcium salt, the molar amounts in claim 1 at issue

are measured in the wash water (i.e. the detergent composition mixed with the hard water) and D1 does not disclose the amount of calcium and magnesium (making up the water hardness) in the added water but only the total hardness. It can thus not be discarded that the molar concentration of calcium in the wash water of D1 is higher than that of magnesium.

2.4.3 Finally, while the board agrees with the opponent in that the presence of bicarbonate in the composition of example 66 in D1 would provide a source of alkalinity, and that, in the absence of a source of acidity in the formulation the pH will likely fall within the claimed range, this cannot be directly and unambiguously concluded with the data at hand.

2.5 Problem solved

2.5.1 The object of the invention is to develop a method of cleaning ware which reduces spotting on tableware (see par. [0009] of the patent).

2.5.2 According to the examples and figures of the patent, precipitation is prevented by working with molar amounts of magnesium in the wash water which are higher than those of calcium.

2.5.3 The board thus considers, in agreement with both parties, that the problem solved with respect to D1 is to provide a method of cleaning ware with reduced spotting.

2.6 Obviousness of the proposed solution

2.6.1 Document D5 teaches (see col. 3, lines 47 to 67) that the incorporation of magnesium ions in cleaning

compositions reduces the problems of scaling by inhibiting precipitation of calcium carbonate. The examples show in particular that adding magnesium to hard water reduces water turbidity (i.e. precipitation for all levels of calcium hardness (see col. 10, lines 11-14)) and that the best results are obtained for Ca/Mg molar ratios of 1/1 to 1/2 (see col. 4, lines 45-47).

- 2.6.2 The appellant argued that the skilled person would not take into account the content of D5 to solve the underlying technical problem, because D1 and D5 belonged to different technical fields. In particular, D5 did not concern the prevention of spotting on tableware but related to the prevention of encrustation in textiles caused by scaling in laundry washing processes. There were multiple technical differences between D5 and the dishwashing process of the invention or D1: first, the ash build up in laundry cleaning also included sodium carbonate residues and not only calcium carbonate precipitates; second, textile and tableware surfaces differed significantly both in structural/physical terms and in their chemical properties; third, while spotting on tableware takes place in the presence of calcium ions in hard water by means of calcium carbonate crystallisation caused by the fast drying step in dishwashing processes, encrustation in laundry cleaning occurred during submergence of textiles after multiple washing cycles as a result of the large concentrations of sodium carbonate builders in the laundry detergents compositions (i.e. water hardness did not play a significant role); and fourth, the pH in the laundry process of D5 could be expected to be about 11 to 12 as a result of the large concentration of carbonates, which was significantly higher than the pH of 8 to 10 of the invention.

The technical differences and the difficulties to transfer knowledge from laundry cleaning processes to dishwashing methods was further illustrated by document D10, but this document indicated (see page 338) that since the requirements in dishwashing and laundry cleaning were different, knowledge could not be easily transferred between these fields. D10 also explained (page 335) that encrustation in laundry cleaning was not only caused by calcium carbonate but also by the large amounts of sodium carbonate builders in laundry compositions. These differences were also explained on page 338, which indicated that while encrustation could only be noticed after several washing processes, spotting could be apparent after a single washing cycle. Moreover, the difficulties to transfer knowledge between fields was exemplified by the fact that zeolites, which were commonly used as laundry detergent builders, could not be used in dishwashing processes as they gave rise to clouding of articles and machine surfaces.

It was thus apparent that a skilled person starting from document D1 would not take into account the teachings in D5 for solving the technical problem of preventing or reducing spotting on tableware.

The appellant further argued that even if D5 was taken into account, this document did not clearly teach the solution proposed in the invention. In the cited examples of D5, the Ca/Mg molar ratios varied from 2:1 to 1:3, so there was only a partial overlap with the ratio $\text{Ca/Mg} \leq 1$ defined in claim 1. The turbidity tests performed in the examples of D5 were also different from those in the patent, and concerned a solution with certain amounts of calcium chloride and sodium carbonate. By contrast, the tests in the patent did not

include any sodium carbonate but were conceived to demonstrate that the addition of magnesium worked as well as a conventional chelating agent. Moreover, in example 3 of D5 a Ca/Mg ratio of 1:1.6 at high hardness led to an increase in turbidity, so this document taught away from using lower Ca/Mg molar ratios. Thus, the skilled person would only arrive at the claimed Ca/Mg ratio by cherry picking specific data from the examples in D5. This document further specified (passage bridging cols. 6 and 7) that the addition of magnesium could also increase encrustations if the wash cycles were above 20 minutes. Since the washing cycles in dishwashing were generally longer than 20 minutes, this document effectively taught away from the solution proposed in the invention.

The appellant finally argued that there was no teaching in D1 or D5 to operate in a pH range between 8 and 10. In particular, D1 did not specify the pH of the exemplary compositions and D5 taught formulations with high carbonate concentrations, which would be expected to have a pH of 11 to 12. The difference in the pH played a relevant role as part of the solution, because as shown in tables 7 to 10 of the patent, the observed reduction of the scaling/spotting was more significant at lower pH values.

Consequently, even if the teachings of D5 were taken into account, they would not lead to the solution proposed in claim 1 at issue.

- 2.6.3 The board disagrees with the appellant because D1 and D5 in fact belong to different sub-fields of the same general technical field of cleaning processes and detergent compositions. This conclusion is supported by the handbook D10, which discusses the problem of

scaling with respect to both laundry and dishwashing detergent compositions in subsequent paragraphs. As also indicated on page 338 of D10, "*Many aspects of fabric laundry technology have been transferred to machine dishwashing over the years*", which highlights the fact that, despite the differences, there is a clear knowledge transfer between these sub-fields. The board thus concludes that the skilled person would not disregard the teachings in D5 *a priori* on the basis that it belongs to a different technical field.

While the board agrees that there are a number of technical differences between the phenomenon of spotting on tableware and the problem of encrustation in textiles, the relevant question is whether these would prevent the skilled person from recognising that the solution proposed in D5 would be applicable with a reasonable expectation of success to dishwashing processes.

In this respect, the board first notes that according to D10 (see 1st par of page 335; passage bridging pages 335 and 336; and last par. of page 337), the common cause to the problems of encrustation in laundry and spotting on tableware is scaling (mainly) resulting from calcium carbonate precipitation. This conclusion is underpinned by the fact that both the patent in suit (see par. [0159]) and D5 (see col. 7, lines 27-39) rely on measurements of turbidity caused by calcium carbonate precipitation to assess the effectiveness of anti-scaling measures. The board notes that, contrary to the appellant's arguments, this observation does not represent an attempt to rely on the information in the patent to construct the inventive step argumentation, but is simply meant to strengthen the conclusions drawn from D10, i.e. the board is not arguing that the

skilled person would consider D5 on the basis that it uses a similar test to that in the invention, but rather that this reinforces the conclusion obtained from D10 that calcium carbonate precipitation is the main cause of encrustation in laundry cleaning and of spotting in dishwashing.

As pointed out by the appellant, the main differences between encrustation in laundry cleaning and spotting in dishwashing are: i) the conditions triggering the saturation/precipitation of calcium carbonate, and ii) the way in which surface deposition of the precipitated salts takes place. However, in both applications calcium carbonate crystals form, grow and precipitate when the concentration of calcium and carbonate in the solution reach a saturation point. But while in laundry cleaning the saturation point is reached as a result of the excess carbonate concentration from the soluble carbonate salt builders in the detergent composition, in dishwashing methods precipitation is triggered by the quick drying step, which results in a sudden increase of the calcium and carbonate concentrations in the wash water. These differences are nonetheless not expected to play any role in the inhibition of calcium carbonate precipitation in the presence of magnesium salts. In particular, since the addition of magnesium salt according to D5 is said to inhibit precipitation of calcium carbonate (see col. 3, lines 59-67), this effect would be expected to take place during the formation and growth of calcium carbonate crystals, so a skilled person would not consider the differences in the steps leading up to the saturation of the solution to play any relevant role in this respect.

An analogous conclusion applies to the differences in the surface deposition between laundry cleaning and

dishwashing processes, as these would clearly be irrelevant to decide whether the inhibition of calcium carbonate precipitation in the laundry cleaning of D5 would also be expected to occur in dishwashing processes.

The board thus concludes that none of the differences between encrustation in laundry cleaning and spotting in dishwashing would prevent the skilled person from recognising that the reduction in scaling observed when working with Ca/Mg molar ratios as proposed in D5 would also be expected to occur within the context of the dishwashing processes in D1. The skilled person would therefore contemplate the teachings in D5 when seeking solutions to the underlying technical problem starting from the dishwashing processes in document D1.

The board also considers that the teachings in D5 clearly lead to the solution defined in claim 1 at issue, as the examples in D5 explicitly indicate that the addition of magnesium inhibits calcium carbonate precipitation and the best results are invariably obtained with Ca/Mg molar ratios smaller than 1. This is not only derivable from the examples in D5, but also from the conclusions in this latter, which clearly establish that the reduction in encrustation is most evident when the molar ratio of Ca/Mg is 1/1 to about 1/2 (see col. 4, lines 45-47), a range falling within the scope of claim 1 at issue. The board also notes that the increase in turbidity at 1/1.6 Ca/Mg molar ratio in table II is actually observed with a higher water hardness. In any case, even if the effect of magnesium was not reproduced for very low Ca/Mg ratios, this would simply imply that the inhibition of CaCO₃ precipitation reaches an optimal value at a Ca/Mg ratio smaller than 1 but higher than 1/1.6, which in fact

corresponds to the above-cited conclusions in D5. The board therefore concludes that document D5 clearly teaches that scaling is reduced when the Ca/Mg molar ratio is equal or smaller than 1.

The board also notes that the reference to the alleged decreased efficiency with longer wash cycles in column 6 of D5 does not modify the above conclusion. As pointed out by the opponent, the ensuing sentence in this passage (i.e. the sentence bridging cols. 6 and 7) indicates that in the presence of polymeric polycarboxylates, the inhibition of scaling and encrustation caused by magnesium is observed for all practical wash cycles, and that this effect is considerably greater than that obtained with the polymeric carboxylates alone. Since the formulation 66 in table 14 of D1 used as closest prior art includes polycarboxylates, in particular polymer chelators 1 and 2 comprising sodium polymaleate and sodium polyacrylate (see paras. [0111]-[0112]), it follows that the cited passage in cols. 6 and 7 of D5 would actually provide a further incentive to contemplate the solution proposed in this document for inhibiting scaling and spotting in the dishwashing method of document D1.

The board thus concludes that when starting from D1 and in view of the teachings in D5 it would be obvious for the skilled person to consider working within the Ca/Mg molar ratio defined in claim 1 at issue to reduce spotting on tableware.

The board further notes that, contrary to the arguments of the appellant, the compositions according to D5 do not clearly lead to pH ranges of 11 to 12. While this range would correspond to a solution of sodium carbonate, as indicated at the oral proceedings, the

tests in example 3 of D5 are carried out in the presence of carbonate and bicarbonate salts, so the pH would be unlikely to reach such high values. In any case, the underlying inventive step approach is based on combining a dishwashing process using the formulation 66 in table 14 of D1 with the Ca/Mg molar ratio proposed in D5. Thus, the properties of the laundry detergent in D5 are mostly irrelevant for the underlying argumentation, as there would be no apparent reason for the skilled person to contemplate modifying the pH or the ingredients in the dishwashing formulation of D1 in view of the laundry formulations in D5 when seeking solutions to reduce spotting on tableware. The only relevant question is therefore which pH range would be contemplated by the skilled person when starting from the formulation 66 in document D1.

It is known from document D1 that the pH of the dishwashing compositions should be 5.6 to 8.6 (see par. [0137]). In view of the components in the different formulations, it is apparent that one of the main sources of alkalinity is sodium bicarbonate, which has a particularly high concentration in formulation 66. This formulation is thus conceived to provide mild alkaline conditions, which would fall within the top portion of the pH range 5.6 to 8.6 and therefore also within the claimed pH range of 8 to 10.

In any case, assuming for the sake of argument that the information in D1 does not suffice to conclude that the dishwashing process would be performed at a pH of 8 to 10, the relevant question would be whether it would be obvious for the skilled person to contemplate working within this range. In this respect, the board notes that the patent does not associate the pH range of 8 to

10 to any specific effect or improvement, but simply indicates (par. [0048]) that it is desirable to work at mildly alkaline conditions because it is considered to be safer. The argument that the reduction of spotting is more significant at a pH 8 than at higher pHs (i.e. 10 or 12) is not relevant for this discussion because, as pointed out by the opponent, document D1 already teaches working at a low pH range of 5.6 to 8.6. Since no effect has been associated with the selection of a mildly alkaline pH (i.e. higher than pH 8) with respect to the alternatives in D1 of working at neutral or mildly acid pHs, the board concludes that it would be equally obvious for the skilled person to contemplate cleaning processes at one or the other (i.e. pH of 5.6 to 8 or pH of 8 to 8.6). It follows that the selection of mildly alkaline conditions or a pH of 8 to 10 does not provide an inventive contribution with respect to the pH range of 5.6 to 8.6 disclosed in document D1.

While this point was not raised by the appellant, the board notes that it would also be obvious to contemplate a water hardness falling within the scope of claim 1 (i.e. in excess of 100 ppm), because D1 explicitly discloses (see par. [0141]) anti-scaling tests in which the compositions are exposed to water hardness of 250 ppm.

2.6.4 It follows from the above considerations that the subject-matter of claim 1 at issue is obvious for the person skilled in the art faced with the underlying technical problem at least in view of D1 combined with the teachings of D5.

3. Auxiliary request 1 - Inventive step

- 3.1 The subject-matter of claim 1 at issue corresponds to that of the main request, with the additional requirement that *"the composition comprises less than 2 wt-% chelating agent"*.
- 3.2 The appellant argued that the composition 66 in D1 included 5 wt.-% of polymer chelators and 12 wt.-% of sodium citrate (which could be considered to be a chelant). Claim 1 of D1 also disclosed the presence of a chelating agent in an amount of 0.2 to 10 wt.-%, as well as 50 to 96.8 wt.-% of a component which could be citrate or amine salts, both falling under the definition of chelants. It was thus apparent that the chelant concentration in D1 was significantly higher than 2 wt.-%.
- 3.3 The board notes that claim 1 defines the "composition" as comprising the detergent formulation (i.e. magnesium salt, alkalinity source and surfactant) and hard water (i.e. the water added to the detergent formulation in the cleaning process as described in par. [0002] of the patent). Therefore, the composition according to the claim refers to the wash water formed by combining the detergent formulation with the hard water, and not to the detergent formulation as such. The defined limit of *"less than 2 wt.-%"* thus corresponds to the percentage of chelant in this wash water. This interpretation is in line with how the appellant and the opposition division interpreted the claim for assessing patentability, in particular when they concluded that the presence of a magnesium salt and no calcium salt in the detergent composition 66 of D1 did not anticipate the molar ratio of claim 1, because this ratio had to be measured after mixing the detergent composition with the water used in the cleaning process, i.e. in that case the "composition" was assumed to be the

combination of the detergent formulation with the cleaning water and not the detergent as such (as explained above, the board agrees with this interpretation).

Since composition 66 in D1 is used in a concentration of 0.2 wt.-% in the washing test (see table 14), the percentage of chelant in the wash water or in the "composition" in the sense of the invention is much lower than 2 wt.-% (i.e. 17 wt.-% in the detergent composition but only 0.034 wt.-% in the wash water composition). The board thus concludes that the amount of chelant in example 66 of D1 falls within the scope of claim 1 at issue.

3.4 Consequently, the objections presented against the main request also apply to this request, which does therefore not meet the requirements of Article 56 EPC.

4. Auxiliary request 2 - Inventive step

4.1 The subject-matter of claim 1 at issue corresponds to that of auxiliary request 1, with the additional requirement that the method is an automatic ware washing or dishwashing method.

4.2 Since D1 discloses an automatic dishwashing method, the same argumentation and conclusions presented for the previous requests apply to this request, which does therefore not meet the requirements of Article 56 EPC.

5. Auxiliary request 3 - Inventive step

5.1 The subject-matter of claim 1 at issue corresponds to that of auxiliary request 2, with the additional

requirement that the surfactant is a nonionic low foaming surfactant.

5.2 Document D1 anticipates the use of nonionic surfactants (see example 66 and par. [0024]). This document also indicates (see par. [0026]) that the mixture of nonionic and anionic surfactants should provide an improved cleaning and anti-foaming performance.

5.3 The appellant argued that D1 did not specify that the selected surfactants were low foaming and that nonionic surfactants could also be high foaming. Document D1 did therefore not clearly anticipate the use of nonionic low foaming surfactants.

5.4 The board disagrees with this argumentation, as it is apparent in view of par. [0026] of D1 that the combination of nonionic and anionic surfactants in the formulations according to this document should improve the anti-foaming performance, which only appears possible if all the selected surfactants are low foaming. Moreover, since the functional concept "low foaming" is relative, it is not apparent how this feature could provide a clear differentiating feature.

5.5 In view of these considerations, the board concludes that the same argumentation and conclusions presented for the previous requests also apply to this request, which is thus not considered to meet the requirements of Article 56 EPC.

6. Auxiliary request 4

6.1 The subject-matter of claim 1 at issue corresponds to that of auxiliary request 3, with the additional

requirement that the nonionic surfactant includes secondary ethoxylates.

- 6.2 The opposition division concluded that the subject-matter of claim 1 extended beyond the content of the application as filed, because the amendments were based on several selections from lists: first, a selection of an automatic process and second, a selection of the secondary ethoxylates from the alternatives on page 30, lines 13-19 of the A2 publication. While the board does not agree with this conclusion, as noted in the preliminary opinion, the subject-matter of claim 1 at issue is not considered to overcome the inventive step objections.
- 6.3 The only arguments presented by the appellant in regard of inventive step is that this feature was introduced for the purpose of differentiating the invention from the formulations in document D6.
- 6.4 The board notes that no effect has been associated with the use of secondary ethoxylates, which the patent itself presents as suitable nonionic surfactants. Moreover, the use of nonionic surfactants comprising secondary ethoxylates is not only well-known in the field, but is disclosed as an alternative in D1 (see for example polyoxyethylene polypropylene alkyl ethers in par. [0013]). The board therefore concludes that using such polymers would represent an obvious alternative for the skilled person when starting from D1 as the closest prior art.
- 6.5 Thus, the same argumentation and conclusions presented for the previous requests also apply to this request, which is thus not considered to meet the requirements of Article 56 EPC.

7. In view of the above considerations, the board concludes that none of the claim requests filed by the appellant meets the requirements of the EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated