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**Datasheet for the decision  
of 10 October 2014**

**Case Number:** T 1343/12 - 3.3.06

**Application Number:** 05822630.9

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C11D17/04, A47L13/17

**Language of the proceedings:** EN

**Title of invention:**  
OIL SOLUTION FOR DUST ADSORPTION

**Applicants:**  
Uni-Charm Corporation  
Sanyo Chemical Industries, Ltd.

**Headword:**  
Dust adsorbing oil/UNI-CHARM

**Relevant legal provisions:**  
EPC Art. 123(2), 52(1), 56

**Keyword:**  
Amendments - added subject-matter (no)  
Inventive step -  
no definitive evaluation possible due to poor quality of the  
machine translation of the closest prior art document  
Remittal to the department of first instance - (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
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Case Number: T 1343/12 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 10 October 2014**

**Appellant:**  
(Applicant 1)

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**Appellant:**  
(Applicant 2)

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**Representative:**

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**Decision under appeal:**

**Decision of the Examining Division of the  
European Patent Office posted on 16 December  
2011 refusing European patent application No.  
05822630.9 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** B. Czech  
**Members:** E. Bendl  
U. Lokys

## Summary of Facts and Submissions

- I. The appeal lies from the decision of the examining division to refuse the European patent application 05 822 630.9, published as EP 1 835 015.
  
- II. The examining division found *inter alia* that the claimed subject-matter lacked inventive step in view of documents  

D1 = JP 2002-069 436 A & machine translation  
thereof into English

and

D4 = JP 2003-055 122 A & machine translation  
thereof into English.
  
- III. With the grounds of appeal the appellants (applicants) submitted an amended set of claims and held that the requirements of the EPC were met. With regard to inventive step the appellants pleaded that the examining division did not take full account of the evidence presented in the application.
  
- IV. In a communication issued together with the summons to attend oral proceedings the board called into question the allowability of the amended set of claims under Articles 84 and 123(2) EPC and expressed doubts regarding the issue of inventive step.
  
- V. Oral proceedings took place on 10 October 2014. The debate focused on the pending objections raised by the board in its preliminary opinion. Thereupon, the appellants submitted as their sole request a new set of amended claims replacing the one previously pending.

VI. The independent claims 1 and 4 according to this new set of claims read as follows:

"1. An oil for dust adsorption, comprising: a base oil (A); a nonionic surfactant (B) comprising an aliphatic alcohol alkylene oxide adduct (B11) and an aliphatic carboxylate ester (B2); and an allergen inactivation component (C); wherein the nonionic surfactant (B) is for dispersing or dissolving the component (C) in the base oil (A) and the component (C) can be stably blended with the base oil (A) using the nonionic surfactant (B); the aliphatic alcohol alkylene oxide adduct (B11) is represented by a general formula (1):



wherein,  $R^1$  represents an aliphatic hydrocarbon group of 1 to 24 carbon atoms or an alicyclic hydrocarbon group of 3 to 24 carbon atoms, A represents an alkylene group of at least 2 carbon atoms, and k represents either 0 or an integer of 1 or greater, with an average value within a range from 1 to 50; the component (B11) satisfies either a formula (2) or a formula (3); with the value of c determined from a formula (4) being no more than 1.0:

$$M_w/M_n \leq 0.030 \times \ln(v) + 1.010 \quad (\text{wherein, } v < 10) \quad (2)$$

$$M_w/M_n \leq -0.026 \times \ln(v) + 1.139 \quad (\text{wherein, } v \geq 10) \quad (3)$$

$$c = (v + n_0/n_{00} - 1) / [\ln(n_{00}/n_0) + n_0/n_{00} - 1] \quad (4)$$

wherein,  $M_w$  represents a weight average molecular weight,  $M_n$  represents a number average molecular weight, v represents an average value of k in the

*general formula (1),  $\ln(v)$  represents a natural logarithm of  $v$ ,  $n_{00}$  represents a number of mols of aliphatic alcohol used in a synthesis reaction for the component (B11), and  $n_0$  represents a number of mols of unreacted aliphatic alcohol; and the quantity of the nonionic surfactant (B) is in the range of 10 to 30% by mass of the oil for dust adsorption."*

*"4. A fiber product for dust adsorption, which has been treated with the oil for dust adsorption according to any one of Claims 1 to 3."*

The remaining dependent claims 2 and 3 are directed to more specific embodiments of the claimed oil for dust adsorption.

Claim 2 of the previously pending request was deleted in response to objections raised by the Board under Article 123(2) EPC with regard to the claimed specific combination of the features according to claim 1 of said request with the features of said claim 2 defining a plant extract from the genus *Olea* (olive) or the genus *Ligustrum* of the family *Oleaceae* as the allergen inactivation component (C).

VII. The appellants requested that the decision under appeal be set aside and that a patent be granted on the basis of the set of claims 1 to 4 submitted during oral proceedings.

VIII. The arguments of the appellants of relevance here, i.e. regarding inventive step, can be summarised as follows:

- Taking D1 as the closest prior art, the technical problem consisted in the provision of a stable oil

for dust adsorption with an allergen inactivation component being dispersed or dissolved therein.

- Allergen-inactivation compounds such as the ones disclosed in D4 were water soluble. It would consequently be difficult to disperse/dissolve them in an oil according to D1.
- D1 disclosed a non-ionic surfactant content of less than 10%, preferably less than 9%. Small ratios of oil:surface active agent were stated to be advantageous. Therefore, this document taught away from using an amount of 10 to 30 % non-ionic surfactant.
- Consequently, neither D1 alone, nor the combination with D4 led to the subject-matter as claimed in an obvious manner.

## **Reasons for the Decision**

1. Admissibility of the new claims request
  - 1.1 The pending set of amended claims was only filed at the oral proceedings, in response to objections raised in the Board's communication and addressed in more detail at the oral proceedings. The amendments proposed can be considered as a direct reaction to said objections and reflect the outcome of the debate at the oral proceedings. They do not give rise to any further complex issues.
  - 1.2 Thus, the board decided to admit the request at issue despite its late filing (Articles 114(2) EPC and 13(1), (3) RPBA).

2. Clarity - Article 84 EPC

The board is satisfied that the objections concerning clarity raised against the previously pending claims were overcome by the editorial amendments made.

3. Allowability of the amendments - Article 123(2) EPC

3.1 Claim 1 at issue stems from a combination of claims 1, 3 and 4 of the application as filed, complemented by features taken from general parts of the description and relating

- to the stability of the blend (paragraph [0024], last sentence) and

- to a preferred content/percentage of (B) ensuring favorable dispersion or dissolution of the allergen inactivation component (C) (paragraph [0026]).

The general preference for (B) being a combination of (B11) and (B2) as defined in claim 1 can be derived from paragraphs [0007], [0013] in combination with claims 1 to 4 as filed and is further supported by examples 1 to 4.

3.2 Claims 2 to 4 correspond to original claims 6 to 8, with the back-references being adapted.

3.3 Thus, in the board's judgement, the amended set of claims is not directed to subject-matter which extends beyond the content of the application as filed and therefore meets the requirement of Article 123(2) EPC.

4. Inventive step - Articles 52(1) and 56 EPC

4.1 The invention

The invention relates to an oil for dust adsorption and



to a cleaning implement comprising said oil adsorbed to it (see paragraphs [0001] and [0004] of the application).

The oil according to the invention is supposed to exhibit an allergen inactivation action and to show excellent dust adsorption properties (paragraphs [0001] and [0005]).

#### 4.2 Closest prior art

4.2.1 In the decision under appeal document D1 is considered to represent the closest state of the art. This was not contested by the appellants. Considering the similarities between D1 and the present application in terms of the technical issues addressed and the products disclosed, the board has no reason to take a different stance.

4.2.2 Indeed, D1 (see machine translation) also describes oils for dust adsorption, which may be adhered to dust absorbing textile products (claims 1 and 5). Like the oil according to present application the oil according to D1 is excellent in terms of dust adsorption and separability from waste water (see e.g. paragraph [0062]) and is stable over time (paragraph [0060] and [0062]: "Daily stability" is apparently stability against phase separation).

4.2.3 The oils according to D1 appear to comprise a non-ionic surface active agent of the aliphatic alcohol alkylene oxide adduct type satisfying formulas (1) and either of (2) or (3) defined in claim 1 of the application in suit regarding component B11 (see claim 1 of D1). Preferably, the condition "no more than 1.0" imposed on the value of parameter "c" as defined in formula (4) of

claim 1 at issue also appears to be met (see thirteenth line of paragraph [0013] of D1).

More specifically, the composition exemplified in paragraph [0050] of D1 additionally comprises sorbitan monolaurate, i.e. an aliphatic carboxylate ester as required by claim 1 at issue (component (B2)). Said translated paragraph refers back to "example 2 of manufacture", which appears to concern ethoxylated lauryl alcohol with a c value <1.0. Moreover, from the indication in this paragraph, it can be gathered that the total concentration of nonionic surfactants (ethoxylated lauryl alcohol and sorbitan monolaurate) present in the oil appears to be 2% by weight.

Paragraph [0051] of D1 likewise discloses an oil comprising surface active components of the types (B11) and (B2) as defined in claim 1 at issue in a total concentration of 2% by weight.

Hence, the oils disclosed in said two paragraphs of D1 thus both constitute a most appropriate starting point for the assessment of inventive step.

#### 4.3 Technical problem according to the Appellant

At the oral proceedings, the appellants put forward that the technical problem to be solved in the light of the oils described in the examples according to paragraphs [0050] and [0051] of document D1 consisted in the provision of an oil for dust adsorption with good dust absorption and separability from waste water which also exhibited allergen inactivation properties and was nevertheless stable over time.

#### 4.4 Solution

As the solution to the above problem the application proposes the oil according to claim 1 at issue, comprising a base oil (A), a non-ionic surfactant (B) comprising a specific aliphatic alcohol alkylene oxide adduct (B11) and an aliphatic carboxylate ester (B2), which is characterised in particular

- in that it comprises "*an allergen inactivating component (C)*", and
- in that "*the quantity of of nonionic surfactant (B) is in the range of 10 to 30 % by mass of the oil for dust adsorption*".

#### 4.5 Alleged success of the solution

4.5.1 In order to demonstrate alleged effects attributable to the claimed oil composition, the appellants relied on the data provided in the examples of the application in suit.

4.5.2 Considering the performance data reported in the application (see Table 1), the Boards accepts that the oils according the examples still falling within the terms of claim 1 as amended (i.e. examples 1 to 4) have good properties in terms of dust adhesion, stability over time, allergen inactivation and separability from waste water.

4.5.3 As apparent from the previous considerations, the claimed oils differ from the ones according to the closest prior art only in that they comprise the additional component (C) and a higher amount of non-ionic surfactant.

- 4.5.4 The claimed oils are obviously improved compared to the oils of D1 in that they are also allergen inactivating due to the incorporation of compound C.
- 4.5.5 However, the oils according to the closest prior art (examples of D1 referred to above) also already have good dust adhesion, stability and water separability properties.

For the board, the examples comprised in the application are not suitable, in view of their widely varying compositions, for unequivocally demonstrating any improvement in terms of these properties which could be convincingly attributed to the further distinguishing feature, i.e. the concentration of nonionic surfactant (B) of more than 10% by mass (and up to 30%).

In particular, the examples not falling under the terms of claim 1 at issue differ from Examples 1 to 4 at least by a value  $c > 1$  (example 5, comparative example 2), by a  $M_w/M_n$  ratio not meeting equations (2) or (3) (at least example 5, comparative example 2) and/or by the absence of compound (B2) (comparative example 1), i.e. by other features than the ones distinguishing the oil according to claim 1 at issue from the oils according to the closest prior art from D1 (paragraphs [0050] and [0051]).

Hence, the examples of the application are **not** suitable to demonstrate any effect of the claimed invention in comparison to the closest prior art.

#### 4.6 Reformulation of the technical problem

In the light of the closest prior art, i.e. the oils described paragraphs [0050] and [0051] of D1, it therefore appears that the technical problem has to be reformulated in a less ambitious way, and can be seen in the provision of an oil for dust absorption having comparable properties but additionally exhibiting an allergen inactivation effect.

#### 4.7 Obviousness

4.7.1 D1 does not address the issue of allergens and hence gives no hint with regard to an incorporation of an anti-allergenic component into the dust absorbing oil.

4.7.2 The board is convinced that faced with the technical problem posed (point 4.6 above), the skilled person would take into consideration the contents of documents pertaining to the field of compositions with anti-allergenic properties. D4 is one of these documents and describes the inactivation of allergens by means of extracts of vegetable fruits or leaves from the Oleaceae olive group or the Ligustrum group (see paragraph [0006]), i.e. some of the anti-allergenic agents expressly identified in the application in suit.

4.7.3 Considering that

- D1 mentions the possibility of incorporating other functional additives into the oil (paragraph [0030], last sentence),

and that

- D4 suggest also to use the anti-allergenic plant extract in a liquid dispersed form (e.g. solution, see paragraph [0008]),

the board is also convinced that trying to impart the

oil of D1 with anti allergenic properties by to incorporating a plant extract as described in D4 was one option readily available to the skilled person.

- 4.7.4 The appellants argued, that the skilled person would not combine an oil (according to D1) with a **water-soluble** allergen-inactivating material (according to D4) and that therefore the teaching of these documents would not be combined by a skilled person.

This argument is not convincing if only because claim 1 at issue is silent about the nature, physical state and water-solubility of compound (C). In addition, D4 teaches in paragraph [0007], that the solvent used for the extraction of the allergen-inactivating material may either be polar or **non-polar**. Using a non-polar solvent would lead to the extraction of non-polar, lipophilic anti-allergenic compounds.

- 4.7.5 As emphasised by the appellants, the oils according to claim 1 at issue also differ from the closest prior art in that they comprise a **higher quantity of non-ionic surfactant (B)** (i.e. 10 to 30 wt%).

Consequently, it has also to be assessed whether modifying an oil according to the closest prior art by incorporating an anti-allergenic composition as described in D4 and at the same time increasing the concentration of nonionic surfactant (B) was obvious to the skilled person trying to solve the technical problem posed in the light of the state of the art and common general knowledge.

- 4.7.6 D4 is silent on the use of non-ionic surfactants in anti-allergenic compositions comprising the plant extracts described.

4.7.7 However, paragraph [0030] of D1 (machine translation) refers *inter alia* to the incorporation of non-ionic surface active agents (also of the (B2) type), and the subsequent paragraph [0031] contains the following sentence:

*"The amount of the surface-active agent used besides the above of below 10 mass % is 0.1 to 8 mass % still more preferably preferably [sic] among the oils of this invention."*

From this passage of the machine translation of D1 it cannot be derived unambiguously

- (a) whether the total amount of non-ionic surfactants (B11 plus B2 type) necessarily has to remain **below 10 wt%** and the range 0.1 to 8 wt% refers to a preferred embodiment within this broader range - in which case D1 would teach away from using contents of 10 to 30 wt %, or
- (b) whether a content of **more than 10 wt%** of non-ionic surfactant is also possible, e.g. in the sense of less than 10 wt% (B11) **plus** 0.1 to 8 wt% (B2), due to the wording "*besides the above*"; this understanding implying a teaching towards oils falling under the terms of claim 1 at issue.

4.7.8 At the oral proceedings, the appellants held that it could be gathered from from paragraph [0033] and from the examples of D1 that concentrations of surface active agent far below 10 mass % appeared to be favourable as regards dust adsorption, stability and separability from waste water.

However, due to the poor quality of the machine translation, the board considers that no unambiguous information can be gathered in this respect from the paragraph in question.

4.8 Remittal to the examining division

4.8.1 Since it appears that the assessment of inventive step hinges to a great extent on the true disclosure of D1 in terms of surfactant contents and the corresponding effects, a definitive conclusion regarding the issue of inventive step in the light of D1 cannot be reached based on the machine translation thereof, which appears to be unclear and/or ambiguous in several relevant aspects.

4.8.2 Therefore, the board considered it appropriate to remit the case to the examining division for re-consideration of the issue of inventive step in the light of a **certified** translation of D1.



## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division for further examination of inventive step based on the claims 1 to 4 according to the request submitted during oral proceedings and on a certified translation of document D1.

The Registrar:

The Chairman:



G. Nachtigall

B. Czech

Decision electronically authenticated