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**Datasheet for the decision
of 12 January 2018**

Case Number: T 0471/15 - 3.3.06

Application Number: 08717767.1

Publication Number: 2134828

IPC: C11D3/00, C11D17/00, C11D3/48

Language of the proceedings: EN

Title of invention:
Toilet cleaning block

Patent Proprietor:
Unilever N.V. / Unilever PLC

Opponents:
Buck-Chemie GmbH
Henkel AG & Co. KGaA

Headword:
Transparent block / UNILEVER

Relevant legal provisions:
EPC Art. 100(b)
RPBA Art. 12(4), 13(1)

Keyword:

Admittance of evidence filed in the appeal proceedings: yes
Sufficiency of disclosure: no

Decisions cited:

Catchword:



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Case Number: T 0471/15 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 12 January 2018

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 22 January 2015
rejecting the opposition filed against European
patent No. 2134828 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman B. Czech
Members: L. Li Voti
 J. Hoppe

Summary of Facts and Submissions

I. The appeals of Appellant I (Opponent 1) and Appellant II (Opponent 2) are from the decision of the Opposition Division to reject the two oppositions filed against European patent No. 2 134 828.

II. Claim 1 of the patent as granted reads as follows:

" 1. A toilet cleaning block, which is at least partially transparent or translucent, characterized in that it comprises:

a. 50 to 98% by weigh[t] of the block of a carrier composition comprising:

i. 5 to 50% by weight of the carrier composition soap

ii. 30 to 90% by weight of the carrier composition humectant; and

iii. 5 to 30% by weight of the carrier composition is solvent.

b. 2 to 50% by weight of the block of biocide material"

III. Two oppositions had been filed against the patent in suit. Revocation of the patent had been requested *inter alia* on the ground of insufficiency of the disclosure (Article 100(b) EPC).

The documents relied upon by the parties in this respect include the following:

D0: "Data sheet - additional examples" 1 to 7, filed by the Applicant on 13 February 2009 during prosecution of the International application no. PCT/EP2008/053023; and

D6: First sworn statement (Eidestattliche
Versicherung) by Mr. Leipold of 11 July 2011.

IV. As regards sufficiency of disclosure, the Opposition Division came *inter alia* to the following conclusions (decision under appeal, reasons, 2.2, 2.3, 2.6 and 2.7):

D6 was not relevant since it concerned the replication of example 1 of the patent in suit, which did not fall within the ambit of claim 1 of the patent in suit. In fact, none of the formulations exemplified in the patent in suit were within the ambit of claim 1 as granted.

The patent in suit (paragraphs [0024], [0027] and [0033]) contained guidance for the person skilled in the art on how to formulate a cleaning block which was at least partially transparent or translucent, for example by increasing the relative amount of humectant to an amount within the range specified in claim 1.

The patent in suit thus provided to the skilled person sufficient means for carrying out the invention disclosed therein.

Examples 4 to 7 of D0 were additional evidence that the claimed invention could be reproduced.

The patent thus met the requirements of Article 83 EPC.

V. In their respective statements of grounds, Appellant I (Opponent 1) and Appellant II (Opponent 02) both maintained that the claimed invention was insufficiently disclosed. In this respect, Appellant I also relied on the newly filed document

D13: Second sworn statement (Eidesstattliche Versicherung) by Mr. Leipold, of 14 April 2015.

VI. In its reply, the Respondent (Patent Proprietor) rebutted the Appellants' objections and arguments, referring also to the newly filed document

D14: Formulating Detergents and Personal Care Products, by Louis Ho Tan Tai, 2000; pages 236 to 237.

VII. In a letter of 18 July 2016 filed in reaction thereto, Appellant I still maintained its objections regarding *inter alia* sufficiency of the disclosure. It complemented this letter in a further letter dated 29 July 2016, referring additionally to the newly filed document

D17: Sworn statement (Eidesstattliche Versicherung) by Mr. Brunecker, of 27 July 2016.

VIII. The parties were summoned to oral proceedings. In a communication issued in preparation therefor (points 8 and 10 - 10.6) the Board indicated that in its provisional opinion

- documents D13, D14 and D17 appeared to be admissible;
- formulation 1 according to D13 and the corresponding formulation according to D17 appeared to be the only compositions tested by a party falling within the compositional limits of claim 1 at issue.

IX. Both Appellants replied to the Board's communication. Appellant I reiterated and complemented, in particular, its objection regarding the sufficiency of the disclosure.

- X. By letter of 13 December 2017 the Respondent indicated that it would not attend the scheduled oral proceedings. Without further taking position regarding the substance of the case, it maintained all requests, facts and arguments submitted in writing.
- XI. By letter of 18 December 2017 Appellant II also indicated that it would not attend the scheduled oral proceedings, but maintained all requests and statements made in writing.
- XII. Oral proceedings were held on 12 January 2018 in the absence of Appellant II and of the Respondent.
- XIII. Requests

Appellant I (at the oral proceedings) and Appellant II (in writing) requested that the decision under appeal be set aside and that the European patent be revoked.

The Respondent requested in writing that the appeals be dismissed.

- XIV. The parties' arguments of relevance here can be summarised as follows:

Admittance of evidence filed in the appeal proceedings

- **Appellant I** indicated that D13 was only filed with its statement of grounds because the Opposition Division had not considered the experimental evidence D6 to be relevant, in particular because the tested composition, although described in the patent in suit, was outside the ambit of claim 1 as granted. D13 was thus submitted to provide data for a composition

according to claim 1, prepared on the basis of the information contained in the patent in suit.

It further indicated that it had filed D17 in reaction to the Respondent's criticism of D13. D17 concerned the preparation of a cleaning block using formulation 1 according to D13 but incorporating specifically the step of rapidly cooling the prepared mixture of components.

- The **Respondent** indicated that it had only filed D14 with its reply to the Appellants' statements of grounds to support its criticism that D13 failed to disclose essential details of the preparation of the tested formulation 1, e.g. the cooling step. D14 represented common general knowledge with regard to the preparation of transparent soaps and taught that crystal size was related to cooling down rate, and that a long cooling process was detrimental to transparency.

Sufficiency of the disclosure

Appellants I and II submitted that:

- The patent in suit did not contain any example showing how to prepare a toilet block having the compositional features of claim 1 at issue and being at least partially transparent or translucent.

- Examples 4 to 7 of D0 did not fall within the ambit of claim 1 since glycerol had to be counted also as "solvent" component within the meaning of claim 1.

Moreover, **Appellant I** submitted in particular (in writing and orally) the following:

- The description of the patent in suit did not disclose any preparation method for obtaining toilet

blocks as claimed, but merely taught (paragraph [0024]) that "*[t]ransparent or translucent carrier compositions are best formed by a physical blending of soap*", "*best performance [being] obtained when at least part of the soap is a C18 soap*".

- It was also stressed in the description that humectants were able to provide transparency since they were able to maintain microcrystalline domains in the soap chains/ribbons and to prevent further crystal nucleation.

- D13 showed, however, that a formulation according to claim 1 at issue, prepared following the information contained in the patent in suit, and comprising components preferred according to the patent in suit, present in relative amounts within the ranges specified in claim 1, resulted into a white creamy mass and not into an at least partially transparent/translucent block.

- A similar result was obtained according to D17, describing a repetition of the experiment of D13, but incorporating the step of a **rapid** cooling of the mixture of components, necessary according to the Respondent and in view of common general knowledge as illustrated by D14.

- The experiment of D17 was thus not only in agreement with the teaching of the patent in suit but also with common general knowledge (see D14) since the formulation used incorporated crystallization inhibitors (humectants), pure raw materials and no opacifiers, and the heated mixture of components was rapidly cooled.

- Moreover, it was clear from D14 that the conditions listed as items (i) to (v) on page 236, reported to be of relevance in avoiding soap crystallization, did not have to be observed cumulatively. In fact, the processes of preparation of transparent soaps described in more details in D14 observed only some of these conditions, respectively.

- In particular, the specific saponification conditions addressed in items (iii) and (v) were applicable only to the case where saponification of fatty acids was part of the process of preparation of such transparent toilet blocks and they were not a feature according to the patent in suit. Moreover, the use of low temperatures throughout the process, mentioned in item (iii) on page 236 of D14, concerned specific processes like the "Lever U.S. process", referred to also on page 236 of D14, wherein no crystallization inhibitors (humectants) were used as part of the composition (as required instead according to the claimed invention).

- Therefore, at least D17 proved that the person skilled in the art was not able to reproduce the claimed invention across the full ambit of claim 1 taking into account the content of the patent in suit and common general knowledge.

- The invention was thus not sufficiently disclosed and the patent objectionable under Article 100(b) EPC.

The **Respondent** essentially counter-argued as follows:

- The description of the patent clearly indicated that in preparing transparent/translucent toilet blocks as claimed the person skilled in the art had to take care

to keep the soap microcrystalline domains small and to prevent further crystal nucleation.

- D14, representing common general knowledge, contained a similar teaching and clearly indicated conditions to be observed in order to obtain a transparent/translucent soap.

- D13 did not specify clearly how the tested formulation 1 had been prepared and how it had been cooled, e.g. whether it had been cooled rapidly. In fact, as apparent from D14, it was known to the person skilled in the art that cooling down slowly would result in bigger crystal structures and would be detrimental to transparency. The experiment of D13 thus ignored the instruction given in the patent in suit to keep the soap microcrystalline domains small and to prevent further crystal nucleation.

- Moreover, formulations 4 to 7 according to D0 gave transparent blocks in accordance with claim 1 since, for the purpose of the invention, glycerol had to be considered solely as "*humectant*" and not as a solvent. Therefore, the results obtained using these formulations were additional evidence that the invention could be reproduced.

- The patent thus provided sufficient information for the skilled person to carry out the invention and the onus to prove the contrary lied with the Appellants.

Reasons for the Decision

Admittance of documents D13, D14 and D17

1. No objection was raised regarding the late filing of these items of evidence.

Considering also the nature of the documents filed (experimental evidence and illustration of common general knowledge) and their purpose (further corroboration of the respective position regarding sufficiency of the disclosure) (see V-VIII, *supra*), the Board saw no reason for not admitting into the proceedings and disregarding documents D13, D14 and D17 in view of their late filing (Article 114(2) EPC and Articles 12(4) and 13(1) RPBA).

Insufficiency of the disclosure

2. The invention claimed and its description in the patent in suit
 - 2.1 The invention as defined in independent claim 1 (full wording under II, *supra*) concerns a "*toilet cleaning block which is at least partially transparent or translucent*" and comprises
 - 50 to 98% by weight of the block of "*carrier composition comprising*" specific relative amounts of soap, humectant and solvent, and
 - 2 to 50% by weight of the block of a "*biocide material*".
 - 2.2 It is not in dispute
 - that the description of the patent in suit does not indicate any detailed method for the preparation of a toilet cleaning block as claimed, and

- that the examples contained in the patent in suit, as explicitly indicated in paragraph [0057], concern products *"not within the scope of the claims"*.

2.3 However, as regards the preferred features of the at least partially transparent/translucent blocks of the invention the description of the patent discloses the following:

In paragraph [0023]: *"Three key components, being soaps, humectants and solvents are required in different proportions to obtain clear hard surface cleaning blocks."*

In paragraph [0024]: *"Transparent or translucent carrier compositions are best formed by a physical blending of soap ... the best performance is obtained when at least part of the soap is a C18 soap."*

In paragraph [0027]: *"Humectant maintains both structure and clarity, enabling salvation of the soap chains/ribbons to maintain microcrystalline domains. If these domains are kept small and prevent further crystal nucleation, then the resultant structure is transparent. Preferred humectants are polyhydroxylated organic compounds, such as sorbitol and sucrose."*

In paragraph [0030]: *"Solvents also play an important role in the carrier composition. Preferred solvents include glycols, (e.g. monopropylene glycol/ propane-1,2-diol), poly alkylene glycols (e.g. PEG, PPG), water and short chain organic solvents (e.g. ethanol or isopropanol) and perfumes."*

In paragraph [0033]: *"...the use of high level of a biocide such as Benzalkonium chloride does not have*

negative impact on the transparency of the product."

The Board holds that the person skilled in the art would derive from these passages that it is possible to reproduce the invention throughout the full ambit of claim 1 by physically blending soaps, humectants, solvents and biocide material in relative amounts within the concentration ranges of claim 1, whilst taking care that further crystal nucleation of the soap component is prevented.

3. Common general knowledge - document D14

3.1 D14 is a textbook concerning detergent formulation exposing *inter alia* (page 236, lines 10 ff) the "basic principles involved in manufacturing a transparent or translucent soap".

3.1.1 More particularly, it is explained in D14 (page 236, lines 19 to 21) that "soap is opaque because soap molecules form long filament-shaped structures, particularly if the cooling process is long", and that by observing specific conditions "these structures will not form and crystallization will not take place".

3.1.2 The relevant conditions are listed in D14 (page 236, lines 12 to 18) as follows:

"(i) all raw materials should be as pure as possible;

(ii) no opacifying additives should be used;

(iii) certain conditions must be rigorously observed [saponification indices; the titer (melting range) of the fats; the percentage of electrolytes; drying and, in particular, temperature throughout the process ($\approx 35^{\circ}\text{C}$)];

- (iv) crystallization inhibitors must be added (sugar solutions, polyols, glycerine)*; and
- (v) resin and/or castor oil is added to the fatty acid mixture."

(*) The Board remarks in this respect that sugar solutions, polyols and glycerine are "*humectants*" within the meaning of the patent in suit (see paragraph [0027] of the description of the patent, cited in 2.3, *supra*).

3.1.3 D14 then also describes in more detail (page 236, line 21, to page 237, first paragraph including table 8.4) three known processes which can be used for preparing transparent soaps:

- The "Henkel process" (lines 23-26), requires in particular specific saponification conditions in the presence of resin (conditions (i) and (v)), cooling the hot soap in a few seconds and maintaining cold for the rest of the process. The addition of a crystallization inhibitor (condition (iv), *supra*) is not mentioned as a requirement.

- Likewise, the "Lever U.S." process (lines 27-32) does not appear to require the addition of a crystallization inhibitor, but requires keeping the temperature relatively low throughout the process.

As specified in the subsequent lines 33 to 34, "*[i]t can be seen from these two examples that the production of a transparent soap requires great care in the process.*"

- The third process described in detail (page 236, line

35, to page 237, line 1 below table 8.4) requires *inter alia* specific saponification conditions, the addition of sugar and glycerine (i.e. of crystallization inhibitors according to condition (iv), *supra*) and a quick drying of the hot mixture poured into molds. Rapid cooling is not mentioned as a requirement.

3.2 The Board holds that it emanates from the detailed description of these processes that the conditions listed under items (i) to (v) are not to be understood as having necessarily to be observed cumulatively. Combinations of only some of these individual conditions may thus also be sufficient for preventing an undesired degree of crystallization and opaqueness, the result apparently depending on the effectiveness of the selected conditions in preventing a too pronounced crystallization.

3.3 The Board is thus convinced that the skilled person, aiming to obtain a final product having the desired transparency/translucency and taking into account the relevant common general knowledge illustrated by D14 as well as the information provided by the patent, would operate with great care and, if necessary, avoid a slow cooling step in order to prevent unwanted crystallization.

4. The experimental evidence on file

4.1 Experimental report D17

4.1.1 It is not in dispute that the formulation described in D17 (page 2, Mischungsansatz) meets the compositional requirements of claim 1 at issue. It contains 23.5 g of sodium stearate (i.e. a "soap" within the meaning of claim 1), 30.05 g of sorbitol (i.e. a "humectant" within

the meaning of claim 1), 23.5 g of Barquat MS 100, a benzalkonium chloride (i.e. a "*biocide material*" within the meaning of claim 1) and 22.95 g of distilled water (i.e. a "*solvent*" within the meaning of claim 1).

4.1.2 The overall composition thus comprises 23.5 % by weight of the biocide material, i.e. a relative amount well within the range of "*2 to 50% by weight*" specified in claim 1 and 76.5 % by weight of the "*carrier composition*" (i.e. the overall composition without the biocide material), i.e. a relative amount of the carrier composition well within the range of "*50 to 98% by weight*" specified in claim 1.

4.1.3 The "*carrier composition*" comprises, based on its weight, 31% by weight soap, 39% humectant and 30% solvent, in accordance with the corresponding concentration ranges by weight specified in claim 1 as regards these components (i.e. 5 to 50 %; 30 to 90 %, and 5 to 30 %, respectively).

4.1.4 More particularly, this formulation comprises

- sodium stearate, i.e. a C18 soap as preferred according to the patent in suit (page 3, line 25),
- benzalkonium chloride, i.e. a biocide material preferred according to the patent (page 3, line 54),
- sorbitol, i.e. a humectant preferred according to the patent (page 3, line 36), and
- water, a preferred water solvent according to the patent (page 3, line 44).

4.1.5 Therefore, the Board is convinced that the person skilled in the art would have expected, on the basis of the information contained in the patent in suit and common general knowledge, that such a formulation,

containing preferred components in amounts lying within the required ranges of concentration, should be suitable for obtaining a toilet cleaning block as claimed, i.e. being at least partially transparent or translucent.

- 4.1.6 However, the experiment of D17 shows that this is not necessarily the case. According to D17 (page 1, "Versuchsdurchführung") all components were mixed under heating at 75°C, the molten mixture was then kept at 75°C for 5 minutes, before being cooled rapidly using an ice-water bath at 0°C. The resulting product (page 2, "Ergebnis" and "Bild 1") was a white, pasty mass which was not transparent.

4.2 Experimental report D13

A similar result (no transparent or translucent material formed) was obtained in the experiment of D13, according to which the same composition was formulated under heating, but not rapidly cooled. Instead, the hot mixture was left to cool at room temperature (see in this respect, D17, page 1, third full paragraph, and D13, page 1, paragraph "a) Mischungsansatz 1"; page 2, "Bild 1"; page 3, paragraph "Ergebnis zu a)"; page 5, point 1)).

- 4.3 The Respondent, even though having raised criticism against the experiment contained in D13 (see XIV, *supra*), did not criticise the conduct of the experiment of D17 and did not call into question the result obtained. Absent any proof, or even argument, to the contrary, the Board thus has no reason to doubt that the experiment of D17, not involving a slow cooling step, was carried out with the necessary care, i.e. following the information given in the patent in suit,

taking into account common general knowledge regarding the preparation of transparent soaps (as illustrated by e.g. D14), and observing conditions suitable for preventing a too pronounced crystallization.

4.3.1 Therefore, the Board holds that D17 convincingly proves that the skilled person, relying only on information provided by the patent in suit and on common general knowledge, would not be able to reproduce, across the full breadth of the compositional ranges defined in claim 1, an at least partially transparent or translucent toilet cleaning block. More particularly, the patent in suit contains no guidance orienting the person skilled in the art, at loss as regards the reasons for which a composition according to D17 does not give the intended result, towards measures possibly permitting to overcome the inoperability encountered. Identifying such reasons would thus amount to an undue burden imposed to the person skilled in the art seeking to carry out the invention across the full breadth of claim 1.

4.3.2 For the sake of completeness only, the Board remarks that considering (*arguendo*) in the Respondent's favour that examples 4 to 7 of D0 relate to formulations falling within the ambit of claim 1 (i.e. glycerol being counted as humectant and not as solvent), these examples (D0, page 2, table and line 2 below the table) could only show that some specific compositions containing mixtures of specific soaps, solvents and humectants (compositions not exemplified in the patent in suit and quite different from the formulation of D17) may be formed into translucent blocks.

Hence, the Board holds that the results achieved according to these examples cannot outweigh the fact

that a composition as tested according to D17 cannot apparently be formed into a toilet block, which is at least transparent or translucent.

5. Conclusion

5.1 The Board thus concludes that the patent in suit does not disclose the claimed invention in a manner sufficiently clear and complete for it to be carried out, without undue burden, by a person skilled in the art taking into account common general knowledge.

5.2 In the Board's judgement, the ground of opposition under Article 100(b) EPC prejudices the maintenance of the patent in suit.

5.3 The Respondent's (sole) request is thus not allowable.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The patent is revoked.

The Registrar:

The Chairman:



D. Magliano

B. Czech

Decision electronically authenticated