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**Datasheet for the decision
of 11 April 2024**

Case Number: T 1149/21 - 3.3.06

Application Number: 15712059.3

Publication Number: 3097170

IPC: C11D3/40, C11D17/00

Language of the proceedings: EN

Title of invention:

PROCESS TO MANUFACTURE A LIQUID DETERGENT FORMULATION

Patent Proprietors:

Unilever IP Holdings B.V.
Unilever Global IP Limited

Opponent:

THE PROCTER & GAMBLE COMPANY

Headword:

Unilever/Blueing Dyes

Relevant legal provisions:

EPC Art. 56
RPBA 2020 Art. 12(3), 12(5)

Keyword:

Inventive step - (yes)

Discretion not to admit submission - submission admitted (yes)

Decisions cited:

T 2532/17, T 1220/21

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1149/21 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 11 April 2024

Appellant: THE PROCTER & GAMBLE COMPANY
(Opponent) One Procter & Gamble Plaza
Cincinnati, Ohio 45202 (US)

Representative: Gill Jennings & Every LLP
The Broadgate Tower
20 Primrose Street
London EC2A 2ES (GB)

Respondent: Unilever IP Holdings B.V.
(Patent Proprietor 1) Weena 455
3013 AL Rotterdam (NL)

Respondent: Unilever Global IP Limited
(Patent Proprietor 2) Port Sunlight
Wirral, Merseyside CH62 4ZD (GB)

Representative: Brooijmans, Rob Josephina Wilhelmus
Unilever Patent Group
Bronland 14
6708 WH Wageningen (NL)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 24 June 2021
rejecting the opposition filed against European
patent No. 3097170 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman J.-M. Schwaller
Members: S. Arrojo
 R. Cramer

Summary of Facts and Submissions

- I. The appeal from the opponent is directed against the decision of the opposition division to reject the opposition against European patent No. 3 097 170.
- II. In its statement of grounds of appeal, the appellant argued that the subject-matter of claim 1 as granted did not involve an inventive step in view of **D8** (US 5,205,960 A) as closest prior art and in the light of **D2** ("Chlorine" Retrieved from <http://dwi.defra.gov.uk/consumers/adviceleaflets/chlorine.pdf>. January 2010), **D3** ("*The History of Drinking Water Treatment*", US EPA, February 2000), or **D4** ("*Chlorine in Drinking Water*", WHO 2003), **D15** (Racine Water Works, December 2015), **D16** (Racine Water Utility Annual Report, 2011), **D17** (Racine Water Quality Report, 2014), **D18** (Racine Water Quality Report, 2016), **D9** (US 4,436,637 A) or **D10** (WO 2007/130562 A2), or alternatively, in view of **D5** (WO 2006/004870 A1) as closest prior art. Furthermore, it argued that auxiliary requests 1 to 6 did not overcome the inventive step objections and also gave rise to additional clarity issues under Article 84 EPC.
- III. With their reply dated 15 February 2022, the patent proprietors and respondents requested that the appeal be dismissed or, as an auxiliary measure, that the patent be maintained on the basis of one of auxiliary requests 1 to 6 filed therewith.
- IV. Following the board's preliminary opinion that the claims as granted as well as the claims according to auxiliary requests 1 to 5 did not appear to involve an inventive step when starting from either D5 or D8 as

the closest prior art, the respondents submitted additional arguments as well as documents **D20** (Smeets et al. "*The Dutch secret: how to provide safe drinking water without chlorine in the Netherlands*", Drinking Water Engineering and Science, 2009) and **D21** (G. Bitton, "*Microbiology of drinking water production and distribution*", 2014).

V. At the oral proceedings held on 11 April 2024, the respondents withdrew their main and first to fourth auxiliary requests, thus making auxiliary request 5 their new main request.

VI. Claim 1 of said **auxiliary request 5** reads as follows:

"1. A process of preparing a liquid detergent formulation comprising the steps of:

(i) mixing together with stirring for at least 5 minutes in the presence of at least 30 weight % chlorinated water, a surfactant in an amount of 5 to 50 weight %; and additional ingredients in an amount of 0 to 20 weight%, at a water temperature of between 18 and 50 °C; followed by,

(ii) the addition of one or more shading dyes which are capable of depositing to fabric during a wash or rinse step of a washing process providing a visible hue to the fabric, and

wherein the chlorinated water comprises 1.5 to 4.5 ppm chlorine;

wherein the one or more shading dyes are added to the chlorinated water and surfactant as a solid or in aqueous solution, at a concentration of 0.0001 to 0.5 weight %;

wherein the surfactants are selected from the group consisting of linear alkyl benzene sulfonates, linear

*and branched alkyl sulfonates, alkyl ethoxylates,
linear and branched alkyl ether sulfates;
wherein preferably the shading dye chromophore is
selected from the group consisting of mono-azo, bis-
azo, azine and anthraquinone;
wherein the shading dye is alkoxyated."*

VII. The final requests of the parties were as follows:

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

The **proprietors-respondents** requested that the patent be maintained on the basis of auxiliary request 5 filed with the reply to the statement of grounds of appeal of 15 February 2022.

Reasons for the Decision

1. Auxiliary request 5 (new main request) - Admittance
 - 1.1 This request, filed with the reply to the statement of grounds of appeal, corresponds to auxiliary request 5 filed during first instance proceedings, with claim 6 having been deleted to overcome Article 84 EPC objections.
 - 1.2 The appellant requested not to admit this request under Article 12(3) and (5) RPBA, arguing that no substantiation had been provided as to how the request would overcome the outstanding inventive step objections. It referred to T 2532/17, where the Board held that it was not sufficient to identify the basis for the amendments or to point to further distinguishing features without also indicating how

these modifications would overcome the outstanding objections.

- 1.3 The Board is not convinced by these arguments because, as noted in recent decision T 1220/21 (reasons 4.5.1), the discretion not to admit a request under Article 12(5) RPBA may be exercised taking into account the extent to which the lack of substantiation prevents the Board and/or the other party(ies) from recognising the proprietor's intentions.
- 1.3.1 In the present case, the proprietors' intentions are readily apparent from the amendments to claim 1, namely since the documents cited as closest prior art (D5 and D8) both contain the solution to the problem, it is obvious that the further restriction of the technical context or of the preamble of claim 1 is intended to disqualify these documents as closest prior art or at least to make these documents less relevant. In particular, the amendments clearly aim at moving away from document D8, on which the appellant's main line of argument is based.
- 1.3.2 The Board further notes that in the grounds of appeal (point 7.5.1) the appellant presented inventive step objections against claim 1 of the auxiliary request 5 filed during first instance proceedings (identical to claim 1 at issue), and in its argumentation, it shifted the weight from D8 to D5, indicating that the intention to move away from D8 was also recognised without further explanations.
- 1.3.3 The Board therefore concludes that the amendments to claim 1 are self-explanatory and that consequently the lack of substantiation does not hinder the inventive step discussion in any way.

1.4 In view of the above, the Board decided not to exercise its discretion under Article 12(5) RPBA not to admit auxiliary request 5. The request is thus part of the proceedings.

2. Auxiliary request 5 - Inventive Step

The requirements of Article 56 EPC are met for the following reasons:

2.1 Closest prior art

2.1.1 Documents D5 and D8 have been cited as starting points for the inventive step argumentation.

2.1.2 D5 discloses laundry detergent compositions with hueing dyes to reduce discolouring and yellowing of fabrics. In particular, D5 (page 1, pars. 1 to 3) aims at providing detergents that prevent build-up of dyes and can counteract undesirable yellowing and discolouration of fabrics. According to an embodiment at page 16, 2nd full paragraph of D5, the hueing dye is added at a final stage when the other ingredients (except the enzymes, which are also incorporated in this last stage) have already been added and dissolved in water. In at least some of the examples in D5, the concentrations of surfactant, dye and rest of ingredients fall within the scope of claim 1 at issue. Moreover, some of the shading dyes proposed in the general description (though not those used in the examples), such as "Basic Blue 18", "Basic Blue 81" and "Basic Violet 21" are alkoxyated, and so within the sense of claim 1 at issue.

2.1.3 Document D8 discloses a method for preparing clear, stable pre-spotter liquid detergent compositions. In

exemplary composition 29 (see cols. 23 and 24), the dye ("C.I. Direct Blue 86 Dye"), the water (tap water), the surfactant and the rest of the ingredients are respectively provided at concentrations of 0.002%, 67.4%, 15% and 17.6%, all falling within the ranges defined in claim 1 at issue. According to the preparation method of the compositions in these examples, the ingredients are sequentially added under stirring, such that each ingredient is dissolved and dispersed before the next ingredient is added. This exemplary sequence of addition falls within the scope of claim 1 at issue, because the dye is added as the last or second to last ingredient.

- 2.1.4 The appellant argued that the concept of "chlorinated water" in claim 1 represented a proxy for conventional tap water, as chlorination was universally used in tap water for sanitation purposes.
- 2.1.5 While the Board agrees with the appellant that most people would interpret the concept of "tap water" as implying that the water is chlorinated, sanitation with chlorine is not the only existing alternative for tap water. In some countries, such as the Netherlands (see D20), tap water is sanitised using alternatives that do not involve chlorination. Also in countries where the prevailing method for sanitation is chlorination, other methods such as UV or ozone are used in certain areas. Therefore, it is apparent that at least some people would not establish a direct link between the concept of "tap water" and "chlorinated water". The Board thus concludes that the concept of "chlorinated water" is not directly and unambiguously anticipated in D8.
- 2.1.6 The subject-matter of claim 1 therefore differs from D5 or from D8 in that:

- i) the mixture is stirred for at least 5 minutes;
- ii) the water temperature is 18 to 50°C;
- iii) the water is chlorinated and comprises 1.5 to 4.5 ppm chlorine; and
- iv) the shading dye is alkoxyated.

2.2 Problem solved starting from D5 or D8

2.2.1 The opposed patent (pars. [0002] to [0005]) indicates that the problem solved by the invention is the provision of a liquid detergent composition comprising shading dyes which do not break down during the preparation of the detergent.

2.2.2 The patent includes examples demonstrating that the breakdown of shading dyes can be prevented by ensuring that the dyes are added to the mixture after the surfactant and other components have been homogeneously mixed in the chlorinated water. In particular, when the shading dyes are mixed with chlorinated water before adding the other components (see "route A" in par. [0078]) the dyes break down, as evidenced by the reduction in the optical absorbance of the resulting detergent composition (see table 2 in par. [0080]). On the other hand, when the shading dyes are added to the chlorinated water after the rest of the ingredients have been homogeneously mixed (see "route 1" in par. [0079]), they remain mostly unaffected as evidenced by the maintenance of the optical absorbance of the detergent composition (see table 2 in par. [0080]).

Furthermore, according to the experimental report designated **D19** (originally labelled D14), the addition and mixture of all the ingredients of the detergent at the same time also led to a higher breakdown when compared to a process in which the dyes were added and

mixed at the end. The observed ratio of absorbances between the inventive and the comparative method was higher at a temperature of 50°C than at a temperature of 20°C.

- 2.2.3 The appellant argued that the above differentiating features had not been linked to any specific technical effect. The chlorine concentration was an arbitrary selection of values conventionally associated with tap water. The stirring time or the water temperature were also arbitrarily selected.
- 2.2.4 The Board notes that by specifying that the water is chlorinated, the technical context is limited to situations in which the degradation of the dyes takes place. The examples demonstrate that this problem is reduced with the solution proposed in claim 1. The problem solved is thus to provide an alternative process with no significant degradation of the shading dye.
- 2.3 Non-obviousness of the solution
 - 2.3.1 The appellant argued that the solution was based on the arbitrary selection of the stirring time, temperature, chlorine concentration and type of dyes, to which the skilled person would arrive in a nearly one-way street situation by simply reproducing certain embodiments of D5 or D8.
 - 2.3.2 Even though the Board agrees with the appellant that a person skilled in the art would arrive at some of the features of the invention in a nearly one-way street situation, this would not lead to the claimed subject-matter in an obvious manner regardless of whether D5 or

D8 are used as a starting point for the following reasons:

Starting from example 29 in D8, a skilled person would likely contemplate working with chlorinated water when following the instruction of using tap water. It is also reasonable to conclude that stirring the mixture for at least 5 minutes would be contemplated in a nearly one-way street situation when reproducing some of the embodiments in D8, as this document teaches (see col. 22, lines 29-32) that the composition is prepared by stirring the mixture to allow each ingredient to dissolve or disperse before the next component is added. This would however not lead to the claimed invention, because neither the dye described in example 29 (Direct Blue 86) nor any of the other dyes proposed in D8 are alkoxyated, as defined in claim 1 at issue. Therefore, the argument that the skilled person would arrive at the claimed subject-matter in a nearly one-way street situation when starting from D8 is not persuasive.

Starting from the embodiment in which the dye is added to the mixture at a final stage of the process (see page 16 of D5), the skilled person would have to select a number of alternatives in order to arrive at the subject matter of claim 1. In particular, the embodiment in question would have to be combined with those examples in which the concentrations of the components fall within the scope of claim 1, then the non-alkoxyated dyes in those examples would have to be replaced by alkoxyated ones (such as those proposed in the general part of the description) and finally, chlorinated water and a chlorine concentration falling within the claimed range would have to be selected. Already in view of the number of selections which are

necessary to arrive at the subject-matter of claim 1, it is clear that the invention is not obvious when starting from D5. Furthermore, restricting the scope of the process in D5 to chlorinated water is not simply a matter of choice, as the appellant argued. The presence of chlorine is not part of the solution, but rather part of the technical context in which the problem of dye degradation arises. However, the definition of this context involves an inventive contribution based on the recognition that the presence of chlorine can lead to the degradation of dyes and that this problem can be solved, at least in part, by the order in which the components are added.

While D5 recognises that chlorine reacts with dyes (see page 1, 3rd par.), this issue is discussed within a technical context which is totally different from that of the invention. In particular, D5 teaches that chlorine treatment can be used to avoid excessive accumulation of bluing dyes on fabric, but that such treatment is undesirable because it involves additional costs and contributes to fabric degradation. Thus, not only does D5 address a problem opposite to that of the invention (excessive dye accumulation in D5 vs. excessive dye degradation in the opposed patent), but D5 actually seeks to limit or avoid the use of chlorine altogether. It is therefore only with the benefit of hindsight that a person skilled in the art would consider embodiments involving chlorinated water when starting from document D5.

The subject-matter of claim 1 is thus not obvious when starting from either D5 or D8 as the closest prior art.

3. Since no further objections were raised against auxiliary request 5, the Board concludes that the

patent should be maintained on the basis of this claim request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent in amended form on the basis of the claims of auxiliary request 5 filed with the reply to the statement of grounds of appeal dated 15 February 2022, and a description to be adapted where appropriate.

The Registrar:

The Chairman:



A. Pinna

J.-M. Schwaller

Decision electronically authenticated