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Datasheet for the decision of 8 October 2021

Case Number: T 2186/17 - 3.3.06

Application Number: 06110296.8

Publication Number: 1712611

IPC: C11D3/386, C11D3/12, C11D3/06

Language of the proceedings: EN

Title of invention:
Detergent compositions

Patent Proprietor:
The Procter & Gamble Company

Opponents:
1) UNILEVER PLC / UNILEVER NV
2) Henkel AG & Co. KGaA

Headword:
Lipolytic Detergent compositions/The Procter & Gamble Company

Relevant legal provisions:
EPC Art. 56, 113(1)
EPC R. 106
RPBA Art. 12(4)
RPBA 2020 Art. 13(1), 12(3), 25

Keyword:
Holding oral proceedings by Videoconference - violation of a party's right to be heard (no)
main request and auxiliary requests 1-7 not inventive
auxiliary requests 8 - 12 not admitted, prima facie not allowable

Decisions cited:
G 0001/21, T 0097/00, T 1188/00, T 0653/07, T 1598/13, T 1660/19

Catchword:

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Case Number: T 2186/17 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 8 October 2021

Appellant: (Patent Proprietor)	The Procter & Gamble Company One Procter & Gamble Plaza Cincinnati, OH 45202 (US)
Representative:	Gill Jennings & Every LLP The Broadgate Tower 20 Primrose Street London EC2A 2ES (GB)
Appellants: (Opponents 1)	UNILEVER PLC / UNILEVER NV Unilever House, 100 Victoria Embankment / Weena 455 GB-London EC4Y 0DY / NL-3013 AL Rotterdam (GB)
Representative:	Mewburn Ellis LLP Aurora Building Counterslip Bristol BS1 6BX (GB)
Appellant: (Opponent 2)	Henkel AG & Co. KGaA Henkelstrasse 57 40589 Düsseldorf (DE)
Representative:	Viering, Jentschura & Partner mbB Patent- und Rechtsanwälte Hamborner Straße 53 40472 Düsseldorf (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 5 September 2017 concerning maintenance of the European Patent No. 1712611 in amended form.**

Composition of the Board:

Chairman	J.-M. Schwaller
Members:	G. Santavicca
	J. Hoppe

Summary of Facts and Submissions

I. The appeals of patent proprietor (PP) and opponents (O1 and O2) lie from the interlocutory decision of the Opposition Division (OD) to maintain European Patent No. 1 712 611 in amended form (based on AR7 filed during oral proceedings), claim 1 thereof reading:

"*1. A granular laundry detergent composition comprising a lipase which is a polypeptide having an amino acid sequence which:*
(a) has at least 90% identity with the wild-type lipase derived from Humicola lanuginosa strain DSM 4109;
(b) compared to said wild-type lipase, comprises a substitution of an electrically neutral or negatively charged amino acid at the surface of the three-dimensional structure within 15 Angstroms Å of E1 or Q249 ***at any of positions 1-11, 90, 95, 169, 171-175, 192-211, 213-226, 228-258, 260-262*** *with a positively charged amino acid; and*
(c) comprises a peptide addition at the C-terminal; and/or
(d) comprises a peptide addition at the N-terminal; and/or
(e) meets the following limitations:
i) comprises a negative amino acid in position E210 of said wild-type lipase;
ii) comprises a negatively charged amino acid in the region corresponding to positions 90-101 of said wild-type lipase; and
iii) comprises a neutral or negative amino acid at a position corresponding to N94 of said wild-type lipase and/or has a negative or neutral net electric charge in the region corresponding to positions 90-101 of said wild-type lipase; the composition having a reserve

alkalinity as herein defined of greater than 7.5 and the detergent composition comprising up to 15 wt% total amount of aluminosilicate (anhydrous basis) and/or phosphate builder."

II. In the decision, OD decided in essence that late-filed documents E29 (Broschure "Lipex application in household detergents", 2002) to E34 and Experimental reports 3 and 5 (PP) and 4 and 6 (O2) were *prima facie* relevant, and so admitted into the proceedings. Further in view of granted claims 4, 5, 8 and 13, the ground for opposition under Article 100(c) EPC prejudiced the maintenance of the granted patent (MR). Likewise, claims 4, 5, 8 and 13 of AR1-AR5, and claims 4, 5 and 11 of AR6, contravened the requirements of Article 123(2) EPC. AR7 was considered to fulfill the requirement of Article 54 EPC and its claimed composition was held not obvious over **E2** (Research Disclosure IP6553D) as closest prior art, even when taken in combination with **E24** (WO 9707202 A1).

III. With their respective statement of grounds of appeal:

O1 filed new items of evidence **E36**: Bauer et al., *The evolution of detergent builders from phosphates to zeolites to silicates* (1999) and **Unilever Experiment Reports 1** and **2**, and *inter alia* argued that PP's finding that O2's counter data was not relevant because of "wrong" greasy/fatty soil and/or test used was not correct. Upon accepting the validity of O2's counter-data, and considering also O1's Experimental Reports, no improved performance at low builder level was achieved across the whole scope of upheld claim 1; the upheld composition was obvious over E2 as closest prior art in combination with E24 (WO 97/07202 A1). The skilled person starting from Formulation #6 (having a

measured RA of 13) in E2 would reduce its phosphate level, as E2 generally taught unbuilt or low-built detergent compositions, and also because E36 taught that phosphate in detergents might conveniently be replaced with layered disilicates for environmental reasons, thus arriving at the composition of claim 1 at issue.

O2 filed new items of evidence **Experimental report 4a**: Statement of D. Herbst, *inter alia* regarding the reserve alkalinity measurements in Exp. Report 4; **Experimental Report 7**: Statement of D. Herbst regarding the reserve alkalinity of composition 4 of E8 (EP 1 621 605 A1); **E35**: Statement of A. Svendsen on the amino acid residues falling within the 15Å radius of E1 and Q249 in the lipase models available. O2 *inter alia* argued that the composition of upheld claim 1 was obvious over E24 as the closest prior art.

PP filed new MR and AR1-AR6.

IV. In their respective reply to PP's grounds of appeal:

O2 *inter alia* maintained that all the requests on file were not allowable under Article 56 EPC.

O1 submitted **Experimental Report 3** to reinforce its position that since there was no malodour reduction across claim 1, the problem solved was an alternative composition. Further it argued that MR and AR1-AR6 did not overcome the objections under inter alia Article 56 EPC. Finally, it maintained that Experimental Report 2 (Section 3) showed no unexpected performance in stain removal achieved by combining a soil release polymer (SRP) with Lipex.

V. In reply to opponents' grounds of appeal, **PP** filed new **AR4-AR6** and **Experimental Reports 7 and 8**. It contested the late-filing of O2's Experimental 4a and of O1's Unilever Experimental Reports 1 and 2. Experimental Report 4a was an admission that RA measures and malodour testing in O2's Experimental Report 4 were unreliable, and was not suitable to remedy the previous deficiencies. The experimental reports did not show that under the conditions chosen, the relevant effects of lipase were measurable at all. Experimental Reports 1 and 2 attempted to show that no improvement in soil removal associated to the claimed RA and builder level was achieved, although it was clear from the patent and since the reply to the notices of opposition that these were important, so that there was ample opportunity to file the reports at first instance. In any case they were not relevant. The technical problem was the provision of formulating a composition with first wash lipase in such a way as to maximise grease removal performance without excessive malodour. The problem was solved by use of a defined level of strong builder and an RA > 7.5, the effect being achieved also with compositions containing a SRP. Experimental Reports 7 (Sections 2 and 3) and 8 (Sections 2 and 5) supported improved grease removal of a composition with the defined level of phosphate/zeolite and also with a SRP, evidencing that an increase in phosphate level decreased the lipase performance. Finally, it had not been put forward why the skilled person, if starting from E2, would consider Formulation #6, for which RA had been measured by O1. Even if it started therefrom, E2 did not disclose to reduce the level of strong builders in the expectation of improving stain removal. E36 was silent on stain removal vs strong builder level, and would not suggest to reduce their level, as these influence washing performance. From E2/

Formulation #6 it was thus not obvious to arrive at claim 1 without hindsight.

VI. With letter of 18 July 2018 **O2** filed **Experimental Report 9** to demonstrate that not all the variants falling under claim 1 reduced malodour generation at high RA compared to wild type enzyme.

VII. With letter of 31 December 2019, **O1** enclosed **Unilever Experimental Reports 4** and **5**. Experimental Report 4 rebutted PP's criticisms (stain removal in O1's Experimental Report 1 and 2 did not consistently correlate with the level of lipase, suggesting the use of inappropriate wash conditions; the data did not consistently provide errors bars, with no averaging across external replicates; an excessive number of stained swatches was used in a Tergotometer pot; and, the data showed insufficient dynamic range to draw conclusions). The wash protocol now followed that of the "Lard First Wash Test" described in the patent, but the data still did not show an improvement in stain removal performance of Lipex at phosphate level less than 15%. Experimental Report 5 responded to PP's criticism (of 4 June 2018) against O1's earlier malodour assessment work. The report measured Lipex Stain Removal Performance against the same butter-stained swatches as in PP's experimental reports, with the samples being now stored in sealed bottles only for short time before assessment. AR4 to AR6 of 4 June 2018 were late-filed and not admissible.

VIII. On 6 January 2020, **PP** responded to the submissions of O1 and O2. It stated that O1's Experimental Reports 4 and 5 were under consideration and questioned the admittance of O2's Experimental Report 9 and O1's Experimental Report 3, as they attempted to show that

no improvement in soil removal was achieved, although it was clear since the reply to the notices of opposition that such effects were important, there was thus ample opportunity to file the reports earlier.

IX. With letters of 11 June and 20 July 2020, **PP** filed **Experimental Report 10** in reply to Experimental Report 9 (O2), 4 and 5 (O1), and **Experimental Report 11** in reply to O1's Experimental Report 4.

X. With letter of 23 July 2020, **O1** required not to admit PP's Experimental Reports 10 and 11, because they did not add anything significant to the case, as PP sought to prove overall performance with reports giving results in terms of *delta % stain* removal over nil Lipex reference, by hiding the effect of builders.

XI. In its preliminary opinion, the board *inter alia* held that claims 4 and 5 of the MR and all pending auxiliary requests (ARs) did not comply with Article 123(2) EPC, neither did claim 1 of AR1, AR2 and AR4-9. Claim 1 of each of MR and ARs comprising feature (b) with substitutions at positions 90 and 95 infringed Article 83 EPC. The composition of claim 1 of AR3 was found obvious over E2, Formulation #6, taken in combination with E36, hinting at reducing strong builders such as phosphate and zeolite in detergent compositions.

XII. On 11 August 2021 O1 requested that oral proceedings be held by videoconference. In its letter dated 17 August 2021, PP requested to postpone the oral proceedings until such time when all parties can attend in person. Moreover, it denied its consent to oral proceedings being held by videoconference.

XIII. The board changed the venue of the oral proceedings to the format of a videoconference and, with communication of 20 September 2021 rejected PP's request for postponement.

XIV. PP (with letter of 24 September 2021) submitted new **MR** and **AR1-AR11** replacing all requests then on file and commented on the preliminary opinion of the board. As regards inventive step, it argued that SRP was not required and that even if the test reports with SRP were not considered, the remaining extensive data showed a genuine positive effect associated with stain removal and decreasing builder, so that the technical problem was an improved composition. The skilled person facing this problem without hindsight and starting from E2 would not have arrived at the composition of claim 1.

XV. With letter dated 5 October 2021, PP confirmed its objections against oral proceedings being held by videoconference and raised an objection under Rule 106 EPC, arguing that its right to be heard and the right to present its case in a fair manner would not be met by holding oral proceedings by videoconference.

XVI. At the oral proceedings, which took place by video conference on 8 October 2021, PP filed new auxiliary request 12 (AR12). Both opponents objected against the admittance of this new request.

XVII. The final requests were as follows:

The appellant (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained in amended form according to the main request or, as an auxiliary measure, according to any

of auxiliary requests 1 to 11, all filed with letter of 24 September 2021, or, as a further auxiliary measure according to auxiliary request 12, filed during the oral proceedings before the board.

The appellants (opponent 1 and 2) requested that the decision under appeal be set aside and that the patent be revoked.

Reasons for the Decision

1. Objection under Rule 106 EPC against the holding of oral proceedings by videoconference

The board dismissed PP's objection under Rule 106 EPC because its right to be heard under Article 113(1) EPC was not infringed by the discretionary decision not to postpone but rather hold the oral proceedings by videoconference. The reasons for this are as follows:

1.1 In the present case, O1 requested to hold oral proceedings by videoconference because of impairments linked to the COVID-19 pandemic. PP also referred to impairments affecting the ability to travel to the EPO premises and therefore requested postponement of the oral proceedings until such time when all parties can attend in person. In the same letter PP denied its consent to oral proceedings being held by videoconference.

1.2 According to Article 15a (1) RPBA 2020 the board may decide to hold oral proceedings by videoconference if it considers it appropriate to do so, either upon request by a party or of its own motion.

1.3 In G 1/21, reasons 44, the Enlarged Board of Appeal (EBA) concluded that oral proceedings by videoconference are oral proceedings within the meaning of Article 116 EPC. The EBA decided that during a general emergency impairing the parties' possibilities to attend in-person oral proceedings at the EPO premises, the conduct of oral proceedings in the form of a videoconference was compatible with the EPC even if not all of the parties to the proceedings have given their consent to the conduct of oral proceedings in the form of a videoconference. According to the EBA, the videoconference format in combination with the written part of the proceedings is normally sufficient to comply with the principles of fairness of proceedings and the right to be heard (G 1/21, reasons 40). Therefore, although the use of video technology could, either objectively or in the perception of the participants, make it suboptimal as a format for oral proceedings, a party's right to be heard or the right to fair proceedings is normally not impaired when oral proceedings are held by videoconference (G 1/21, reasons 40).

1.4 According to the EBA, a party’s request for oral proceedings being held in person can only be denied if the format of a videoconference is suitable for the particular case and if specific circumstances, such as for instance limitations and impairments during a general emergency, affect the parties' ability to attend oral proceedings in person at the premises of the EPO (G 1/21, reasons 48, 49). In case of a pandemic, examples for such impairments are travel restrictions or disruptions of travel possibilities, quarantine obligations, access restrictions at the EPO premises, and other health-related measures aimed at

preventing the spread of the disease (G 1/21, reasons 49).

1.5 In the present case, O1 (letter dated 11 August 2021) and PP (letter dated 17 August 2021) relied on such limitations and impairments in connection with the COVID-19 pandemic as the representatives needed to travel from the UK to the premises of the EPO in Germany. Beside the travel restrictions and quarantine obligations, within the premises of the EPO access restrictions were also operative.

1.6 The board has no reason to doubt the arguments presented by the parties demonstrating impairments of the representatives' ability to attend oral proceedings in person linked to the pandemic.

1.7 However, the reasons brought forward by the PP as to why a videoconference would not be suitable for this particular case are not persuasive for the following reasons:

1.7.1 PP explained that it had extensive experience with oral proceedings in the format of a videoconference, but did not find the case suitable for being heard by videoconference. It further argued that the case at issue had a high level of complexity as it involved multiple opponents, a large number of objections and cited documents including experimental data. Videoconference also placed greater burdens in terms of effective communication and consistent engagement, in particular in longer meetings.

1.7.2 The board concluded that neither the number of documents, including experimental data, nor the number

of opponents made oral proceedings by video conference inappropriate in the present case.

1.7.3 The platform Zoom, used for oral proceedings being held by videoconference, can easily deal with several opponents, the proprietor and accompanying persons. In oral proceedings being held by videoconference it is even easier to look at multiple presenters as all of them are shown in frontal view. The parties also have the possibility of highlighting the speaker by individually choosing the "speaker view" in Zoom. In contrast, during oral proceedings being held in person some parties/representatives are seated in the front and others in the back of the hearing room so that it puts a greater burden on the parties/representatives to effectively follow oral presentations of the participants whose faces cannot be seen.

1.7.4 The number of accompanying persons did not make oral proceedings held by videoconference unsuitable either. Rather, the representatives and their accompanying persons were able to contact each other during the hearing on separate communication channels. Moreover, the board also offered to provide separate deliberation rooms which opportunity the parties however did not avail themselves of.

1.7.5 The number of objections and documents including experimental data, may well influence the time needed for the discussion, but this does not in general have an impact on the suitability of a videoconference as such.

1.7.6 As regards the duration of the oral proceedings, the board invited the parties to request breaks whenever needed and offered to postpone the proceedings should

the parties feel that the length of the hearing imposed an excessive burden. The board however notes that, during the oral proceedings, none of the parties objected to have been deprived the opportunity or sufficient time to present its case, nor were further breaks or a postponement requested.

1.7.7 PP also argued that the complexity of the case with multiple opponents inevitably presented a greater burden on the representative as it needed to deal with all the objections raised. This burden is however not linked to the format of a videoconference. Incidentally, the board agrees with O1 who noted that the detailed preliminary opinion of the board (sent more than one year before the oral proceedings) remained a suitable framework for structuring and concentrating the hearing to the essentials. Indeed, the debate concerning the requests which had been on file before the oral proceedings was terminated just before 15:00 o'clock, the rest of the time was offered to discuss the PP's new AR12 presented for the first time at that late stage of the proceedings.

1.7.8 The board also bore in mind that PP and O1 both stated having positive and extensive experience with oral proceedings being held by videoconference.

1.7.9 Under these circumstances, holding oral proceedings by videoconference was a suitable alternative to in-person oral proceedings in order to bring the appeal case to a conclusion without the need for further postponement.

1.8 Moreover, the board exercised its discretion in view of the fact that the oral proceedings had already been postponed four times at the request of the parties which had thus resulted in a delay of almost two years.

Excluding oral proceedings by videoconference yet again would have meant postponing the oral proceedings for an unknown length of time. The experience in the past demonstrated the difficulties of finding dates for oral proceedings suitable for all the representatives. In addition, the unpredictable nature of the COVID-19 pandemic leading to repeated postponement of in-person oral proceedings at short notice puts an undue burden on the parties to prepare the case several times.

1.9 Under these circumstances, it was justified to hold oral proceedings by videoconference without infringing PP's right to be heard or the right to fair proceedings.

2. MR, AR1-7: inventive step

2.1 Irrespective of the admittance of these requests, which were all filed on 24 September 2021, the board has come to the conclusion (see *infra*) that the subject-matter of claim 1 of the MR and AR 1-7 lacks an inventive step. The reasons for this conclusion are in essence similar with those discussed extensively during the oral proceedings with regard to AR3. Therefore, it seems appropriate to start the reasoning with the composition according to AR3.

3. Third auxiliary request (AR3)e step

3.1 Claim 1 of this request reads as follows:

"*1. A granular laundry detergent composition comprising a lipase which is a polypeptide having the amino acid sequence of positions 1-269 of SEQ ID NO:2 of US 5869438 with the mutations T231R and N233R with reference to said SEQ ID NO:2*

the composition having a reserve alkalinity of greater as herein defined than 7.5, and
the detergent composition comprising up to 15 wt% aluminosilicate (anhydrous basis) and/or phosphate builder (anhydrous basis)."

3.2 Construction of the claim

3.2.1 The feature "*a lipase which is a polypeptide having the amino acid sequence of positions 1-269 of SEQ ID NO:2 of US 5869438 with the mutations T231R and N233R with reference to said SEQ ID NO:2*" is understood by the skilled person as meaning a variant of the lipase according to SEQ ID NO:2 of D16 (Lipolase in original application) with (only) two substitutions (T231R and N233R) with reference to the mature protein thereof.

3.2.2 The interpretation that only two mutations (T231R and N233R) are present is in agreement with D16 (paragraph bridging columns 11 and 12, starting from line 57, with particular considerations of lines 64-65 of column 11 and lines 2-4 of column 12) according to which the mutations refer to the mature protein and multiple mutations are separated by "pluses" (which clearly applies to all multiple mutations), so that in the present case, the word "*and*" between T231R and N233R means "plus". Thus, the board has no reason to deviate from decision T 1598/13 (reasons, 4.3).

3.2.3 As stated in the patent [0028], and confirmed by E30, the defined lipase with the mutations T231R and N233R is commercially available under the registered trade name "Lipex" (see also E29).

3.2.4 It was never in dispute that zeolite is a *species* of the *genus* aluminosilicate.

3.2.5 The construction of the feature reserve alkalinity (RA) in view of the measured data of the corresponding value in Formulation #6 of E2 (O1's letter of 15 January 2018) (also not contested by the PP in its reply of 4 June 2018, page 13) was never in dispute either.

4. AR3 - Inventive step

4.1 The patent ([0001]-[0003]) relates to laundry detergent compositions comprising high efficiency first wash lipases known from E1 and E2 as variants of lipolase working effectively already during the wash phase of the cleaning process and in the second washing step, with the lipase with the mutations T231R and N233R (registered as Lipex by Novozymes) being the most preferred ([0028]). The objective was thus to maximise the performance from these enzymes by finding new ways of formulating them ([0004]) into laundry detergent compositions.It had allegedly been found ([0008] [0009] [0039]) that when a first wash lipase was used with high reserve alkalinity and low level of phosphate and/ or zeolite, malodour formation was eliminated or reduced and dramatically grease removal benefits were obtained compared to formulations with conventional builder levels.

4.2 Closest prior art

4.2.1 At the oral proceedings before the board it was common ground that E2, acknowledged in the application as filed, is a suitable starting point for assessing obviousness according to the problem-solution approach. In view of the similarity of objectives between the patent in suit ([0004]) and E2 (page 2, third paragraph), and the use of a lipase with mutations

T231R and N233R (E2, page 1), the board has no reason to take a different stance.

4.2.2 The closest embodiment of E2 is Formulation #6, having a measured RA = 13 (O1's statement of grounds, point E(4), page 10, first sentence), which was not contested by PP, but containing too high a **phosphate** level (**21**% vs 15% of claim 1).

4.3 Technical problem to be solved

PP (letter of 4 June 2018, page 13, second paragraph, last sentence; letter of 24 September 2021, last paragraph, last sentence) formulated the technical problem to be solved as to provide improved stain removal, i.e. improved first wash lipolytic detergent composition maximising stain removal without leading to excessive malodour.

4.4 Solution

As a solution thereto the patent provides the granular laundry detergent composition according to claim 1 at issue characterised in particular in that it *comprises* ***up to 15 wt% aluminosilicate*** *(anhydrous basis) and/or phosphate builder (anhydrous basis), and has a reserve alkalinity of greater than 7.5.*

4.5 Success of the solution - Evidence on file

4.5.1 Formulations A to G exemplified in the **patent** ([0108]), all comprise:
- at least 5 wt% sodium linear alkylbenzene sulfonate (**LABS**) (anionic surfactant) in combination with optional further anionic or nonionic surfactants,

- less than 10 wt% **phosphate** or **zeolite** ([0035]) (compositions C and F comprise no phosphate or zeolite, and composition E only comprises 0.5wt% zeolite),
- sodium carboxymethylcellulose (**CMC**)(lime soap dispersant [0073] and anti-redeposition agent [0098]),
- one of sodium **polyacrylate** (A,B,D,G) or **copolymer of maleic/acrylic acid** (C,E,F)(see [0070] and [0073]),
- diethylene triamine pentaacetic acid (A-D,G) or ethylene diamine disuccinic acid (E,F) (**chelant**),
- from 0.1 to 0.6 wt% **Lipex**, in combination with proteolytic and amyolytic enzymes,
- a brightener,
- more than 10 wt% sodium **carbonate** and more than 10 wt% sodium **silicate** (**reserve alkalinity agents** [0048], the latter, also as co-builder [0103]), and
- perfume.

Some of them further comprise **citric acid** (D-F) (**weak builder**, [0038]), lime soap dispersing **polycarboxylate** (C,G), sodium **perborate** (A,D) or **percarbonate** (E-G), and tetraacetylethylenediamine (**TAED**) (A, D-G) (**bleaching agents**, [0096]).

The board notes that the patent, despite mentioning ([0010]) that a dramatical increase in soil removal from reducing strong builder level was not expected, does not contain any experimental data on the "stain removal performance without leading to excessive malodour" effectively achieved by formulations A to G.

In a situation like this, in which the scope of the claimed composition is much broader than the disclosure of the specific Examples in the patent, the burden of proof for showing that all the claimed compositions lead to the alleged advantageous effects mentioned in a generic way in the patent in suit, rests upon the

patent proprietor (T 97/00, reasons 3.1.6). In this respect, PP has also to provide evidence that an improvement is achieved over the closest prior art across the whole breadth of the claim (T 653/07, reasons 5.1.7; T 1188/00, reasons 4.9).

4.5.2 **Experimental reports** have been filed by PP, already since examination proceedings in support of improved wash performance without excessive malodour, and later by the opponents, to contest that these were achieved across the whole breadth of claim 1.

4.5.3 As regards **reduced malodour**, according to the patent a robust alkalinity system (i.e. RA > 7.5, [0035]) is beneficial because it prevents malodours usually associated with the presence of a lipase enzyme, as the alkalinity in the wash neutralises malodorous fatty acids produced by break-down of fatty soils by the lipase enzymes and then, after neutralisation, calcium salts of fatty acids form having significantly lower vapour pressure than protonated fatty acids released by the enzymes ([0008]). Accordingly, two conditions need to be fulfilled by the detergent composition to be able to reduce malodour: RA > 7.5 and the presence of calcium ions. Claim 1 however only requires the first condition.

4.5.4 At the oral proceedings it was common ground that claim 1 at issue was distinguished from Formulation 6# of E2 (page 6), using first wash lipolytic enzyme Lipex as claimed, only in the phosphate level of 21 wt% instead of at most **15** wt% as claimed. Since it is not in dispute that Formulation #6 of E2 has RA > 7.5 (O1's grounds of appeal, page 11, "E2 powder formulation #6, RA = 13") (the sole condition of claim 1 for malodour reduction), also Formulation #6 of D2a implicitly

should perform "without generating excessive malodour" in the same way as required (by the sole condition specified) for the subject-matter as claimed.

4.5.5 Hence, the issues raised by the opponents and still in dispute, that **malodour** reduction is not obtained across the whole breadth of claim 1 as a function of RA, need not be dealt with. Consequently, the following items of evidence need not be dealt with:

(a) **PP's Experimental reports: 2**, as far as filed to demonstrate the difference between Reserve Alkalinity (**RA**) and pH; Experimental report **3**, filed to demonstrate that the reduction in malodour (due to Lipex) achieved in **high RA wash** is of consumer relevance; Experimental report **5** (Sections 1 and 2), Experimental report **7** (Section 1), Experimental report **8** (Sections 3 and 4) and Experimental report **10** (Section 1);

(b) **Unilevers' Experimental Reports 2** (Section 2), **3** (March 2018) and **5**, concerning malodour data at "high" or "low" RA.

(c) **O2's Experimental reports 4** and **4a**, filed to show that compositions 10, 15 and 30 of E24 have RA > 4 and that RA is not related to malodour reduction; **Experimental report 6**, filed to demonstrate the RA value of Composition 4 of D8; and Experimental report **9** filed to demonstrate the malodour reduction of compositions with variants of claim 1 of MR and some other AR versus Lipolase 100L;

4.5.6 In respect of **stain removal performance** vs **strong builder level**, Formulation #6 of E2 contains only too much phosphate (but not zeolite) with Lipex (but not Lipolase). Hence, the reports not comparing different phosphate levels, but different zeolite levels, may not be used to prove that the claimed, low phosphate level

produces ([0008]) an improved "grease removal benefit" over the level of Formulation #6 of E2.

4.5.7 It is established case law that, where comparative tests are carried out to demonstrate an inventive step based on an improved effect over a claimed scope, the nature of the comparison with the closest prior art must be such that the effect is convincingly shown to have its origin in the distinguishing feature of the invention (Case Law of the boards of Appeal, 9th edition, I.D.10.9; T 1660/19, reasons 3.4).

4.5.8 Further, since *zeolite* is only a particular *aluminosilicate*, any effect invoked from reports based on "*zeolite*" is not necessarily achieved by all aluminosilicates encompassed by claim 1 at issue.

4.5.9 Finally, reports dealing with lipases other than Lipex (used in Formulation #6 of E2) are not relevant for assessing obviousness of the subject-matter of claim 1 of AR3 (limited to a lipase with mutations T231R and N233R).

4.5.10 Thus, also the following data dealing with compositions comprising Lipex or **Lipolase** and **zeolite** are not relevant for assessing obviousness over Formulation #6 of E2 and need not to be admitted nor dealt with any further in the decision:

(a) **PP's Experimental report 0**, filed to prove small scale greasy soil removal (Part 1) and full scale laundry (Part 2) testing of compositions comprising certain lipases (**Lipolase**, **Lipolase ultra**, Lipex) at varying levels of **zeolite**; Experimental report **5** (Section 3) filed to prove various Lipex or Lipolase Stain Removal vs **zeolite**; and Experimental

report **10** (Section 2), filed to show lipases stain removal performance vs **zeolite** level;

(b) **Unilever Experimental Report 1**, and **O2's Experimental Report 4**, only in respect of data from compositions with **zeolite**.

4.5.11 Further, since the composition of claim 1 at issue does not require the presence of a **soil release polymer** (SRP), also the following test reports relying on, or not relying on, or disproving (O1) an "above additive" stain removal effect from Lipex + SRP need not be considered to assess obviousness of AR3:
- **PP's Experimental Reports 5** (Sections 1-3); **7** (Sections 1-3); **8** (Section 5); and **10** (Section 2);
- **Unilever's Experimental Report 2** (Section 3).

4.6 Admittance of late-filed items of evidence

4.6.1 Experimental Reports 1 and 2 (O1) as well as Experimental Reports 4a and 7 (O2) were filed with the grounds of appeal. PP contested their admittance as they should have been filed during the opposition proceedings. The board notes that the opposition division did not give a preliminary opinion on whether the then pending experimental reports proved any technical effect provided by the claimed composition. Thus, the submission of further experimental data with the grounds of appeal seems to be a legitimate reaction to the impugned decision, and the board exercised its discretion under Article 12(4) RPBA 2007 (Article 25(2) RPBA 2020) not to exclude these documents from the proceedings.

4.6.2 O2's document E35 and O1's document E36 are to be regarded as the elaboration of previous evidence in reaction to the impugned decision. Thus, the board

exercised its discretion under Article 12(4) RPBA 2007 (Article 25(2) RPBA 2020) not to exclude them from the proceedings.

4.6.3 The board also exercised its discretion under Article 12(4) RPBA 2007 (Article 25(2) RPBA 2020) not to exclude O1's Experimental Report 3 and PP's Experimental Report 7 and 8, because they are a legitimate reaction to arguments and documents filed in the PP's or opponents' grounds of appeal.

4.6.4 O2's Experimental Report 9 is an amendment to the appeal case (Article 13(1) RPBA 2020) but was filed in reaction to PP's Experimental Reports 7 and 8. Also O1's Experimental Reports 4 and 5 are an amendment to the appeal case (Article 13(1) RPBA 2020) but were filed in reaction to the criticism of PP against the previous O1's experimental reports. Thus, the board exercised its discretion to admit them under Article 13(1) RPBA 2020 (Article 25(1) RPBA 2020).

4.6.5 For the same reasons PP's Experimental Reports 10 and 11, which were filed in reaction to the submissions and the experimental reports of the opponents, are admitted into the proceedings under Article 13(1) RPBA 2020 (Article 25(1) RPBA 2020).

4.7 Invoked effect

4.7.1 As regards the invoked argument that the composition "**maximises greasy or fatty stain removal**" vs **phosphate** level, the patent teaches that:
- "*even at the low level of phosphate .., dramatically improved* ***grease*** *removal benefits are obtained compared to formulating lipase with conventional builder levels*" ([0009]). This is supposed to be driven by the

presence of divalent cations enhancing lipase activity by increasing the deposition of enzyme onto fabric surface and/or enhancing precipitation of the insoluble fatty acid salts from the lipolysis enzymatic process;
- "*While builder reduction or elimination might be expected to raise significant stain removal negatives on, e.g. particulate and beverage stains, we have found that the compositions show unexpectedly good performance. It is believed that this is due to fatty acids released by the lipase during lipolysis of fatty soils acting to destabilize these stains via a hardness sequestration effect and reduce the wash pH slightly resulting in lightening of pH-sensitive stains*" ([0010]).

The board has therefore considered the test reports relying on the impact of a reduction of level of **phosphate** on **greasy stain removal performance**, as follows:

4.7.2 **PP's Experimental report 1**, filed in examination proceedings to support an unexpected **lard** removal performance, deals with small-scale soil removal of compositions comprising certain lipase (Lipolase, Lipolase ultra and Lipex) at varying **phosphate** level.

Base detergent contains 9 wt% LABS, 5 wt% AES/3EO, 1 wt% AE/7EO, 0.5 wt% CMC, 4 wt% A/M-polycarboxylate (70,000 MW), 25 wt% carbonate and 30 wt% sulphate, water and minors. Its RA is 9.1.

Test compositions were prepared by adding 0.4 mg of Lipolase or Lipolase Ultra (comparative enzymes) or **Lipex** (invention's enzyme) to 0.492g of granular detergent. Then, a stock solution was made with 20gpg hard (**34.48**°fH) water to contain 0.6 g/l of granular

composition with the enzymes, and topped up with **0**, **5**, **7**, **13** and **16 wt%** of STTP (**phosphate**).

Cotton elastane (polycotton) swatches (5x5 cm) stained with lard and (knitted cotton) ballast at 25:1 water: cloth ratio were washed in a Tergotometer at 30°C, 30' agitation at 200 rpm, 5' rinse in cold water and 12h drying at room temperature (These conditions are not identical to those of Lard test in [0030]-[0034]). A % soil removal vs phosphate level was determined by gravimetry (weighing the swatches before/after soiling, after washing, and averaging, Chart 1) and by Image Analysis (see Chart 2), as for the Lard Test.

According to last page, penultimate paragraph for a test composition with Lipex, a decrease in STPP level leads to significant improvement in performance (52% more lard removed by reducing STPP level from 16 to 0wt%) (Gravimetric analysis).

The board nevertheless notes that:
- Chart 1 shows a significant performance improvement at **0** wt% STPP over a 13 or 16 wt% level, and a lower but still significant and comparable improvement at **5** or **7** wt% over 13 or 16%. However, it does not show that a significant improvement in performance is achieved up to or at 15 wt% STPP level (as claimed), over the 13 wt% or 16 wt% level, as these latter levels appear to produce a stable performance. Thus, the specific composition tested under disclosed particular wash conditions improves performance up to **7** wt% STPP.
- Chart 2 (Image Analysis according to Lard Test, see Lipex only, i.e. Formulation 1) shows a significant improvement at 0 wt% STPP level over 13 or 16%, compared to the gravimetric analysis, and less significant and comparable improvement at 5 or 7 wt%. A

composition with 10% STPP is not tested, so that no significant improvement in stain removal at 10% over 13 or 16 wt% STPP, if any, is proven. Seen the steep decrease from 0 to 7 wt%, the slow decrease between 7 and 13% and the stable performance at 13 to 16 wt% (implying that the claimed limit of 15% is not critical), the report does not show that the specific test composition used effectively improves performance up to/at 15 wt% STPP.

Moreover, the board notes that the choice of the method, whether gravimetric or Image Analysis, has a substantial impact, with the effects in Chart 1 being more pronounced. Irrespective of the lack of data for a composition with 15 wt% STPP, it is not seen what would be the improvement, if any, of a formulation with 15 wt% STPP, as in claim 1, over Formulation #6 of E2 with 21 wt% phosphate.

4.7.3 **O1's Experimental Report 1** (**STPP** Data) was filed with the grounds of appeal in reaction to the decision, to further support the point that no improved performance was achieved at low phosphate level.

Base composition contains 9 wt% LABS, 6 wt% AE/7EO, 0.5 wt% CMC, 4 wt% AA/MA-co-polymer, 25 wt% carbonate, balance sulphate, enzyme and/or STPP with an RA > 4. Lipex is either nil or present at 0.08, 0.3 or 0.6% level, STPP is either nil or present at 5, 10 or 15% level.

Commercial knitted **cotton** swatches (5x5cm) stained with **Cooked (burnt) Beef** or internal stains (**Vanaspati** + Violet dye and **Cooking oil** + Violet dye) were washed with detergent solution prepared with water of **24**°fH/ Ca:Mg 2:1) to ensure 0.5g powder/800ml water, in a

Tergotometer, each beaker filled with 6 swatches per stains, for 30' at 30°C, agitation at 170rpm, 5' rinse, dried overnight. Stain removal (SRI) was calculated after measuring L*, a* and b* before and after washing.

The results on **Burnt Beef**, **Cooking oil** + dye, **Vanaspati** + Violet dye removal vs **Lipex** or **STPP** level are shown in the graphs on pages 8-10. The conclusion on page 11 shows "a trend of reducing Lipex performance as phosphate level is increased is not seen".

The board shares this conclusion, as:
- for burnt beef, irrespective of Lipex level, a STPP level up to 10% (claim 1) leads to stain removal of at most 50%, whilst a STPP level of 15% attains 60 to 70%;
- for cooking oil + dye, irrespective of Lipex level, a STPP level up to 10% (claim 1) leads to stain removal of 30-40%, whilst a STPP level of 15% attains about 50%;
- for Vanaspati + Violet dye a performance of at most 50% is attained at nil or 5% STPP and at 0.08% Lipex, no improvement is achieved at 0.08% Lipex and 10-15% STPP.

It follows that the invoked trend is not always seen.

PP (reply to opponents' grounds of appeal, page 12, last two paragraphs) contested this data as follows: conditions were chosen such that the lipase was actually able to not exert an effect, as seen from the bar graphs, the stain removal performance did not increase as the lipase level increased from 0 to 0.6%, which also appear to happen in most of the tests done. If the test were a true test of whether a particular formulation could maximise the performance of lipase it would be essential to firstly demonstrate that the

conditions could distinguish different levels of lipase activity. In the first set of results on page 5, the results were divided into 4 groups, at 4 different levels of builder, in each group the level of lipase increased from 0 up to 0.6% towards the right. In no case was there a trend whereby grease removal performance increases as lipase level increases. This was true for most of the rest of the data as well.

The board, however, notes that a lipase effect is shown for certain cases (e.g. burnt beef, 0% to 10% STPP, cooking oil at 5% STPP, Vanaspati up to 10% STPP, already at 0.08% Lipex). Moreover, it cannot disregard that the data of PP is based on few specific compositions tested on few stains according to particular wash conditions, whilst claim 1 concerns a composition which is open also as to the level of lipase. O1, in contrast, used compositions falling under claim 1 and generally known Lipex (%) levels (E29, page 2), and their tests were carried out according to internal practices. PP's objection is based on the test conditions (wash method) used by opponents rather than on the compositional features defined by claim 1, implying that the invoked effect also depends on wash conditions and load.

Finally, the board has no element to conclude that the effect of Lipex, if any stronger, would change the trends of the graphs of this O1's report, such that a decrease in STPP level dramatically improves the performance. Thus, PP's objections do not convince the board.

4.7.4 **O2's Experimental Report 6**, filed in opposition proceedings to prove that the builder level does not affect lipase performance on stain removal, and dealt

with in the decision, concerns Detergents A-L, which contain 9% LABS, 5% AES/3EO, 1% AE/7EO, 0.75% HEDP, 4% polycarboxylate, 0,5% (A,C,E,G,I,K) or nil Lipex Evity 100 T, 25 (A-D, I-L) or 15% carbonate, 25% STPP (only in C and D), 11% citric acid (only in Compositions E and F), 25% (Compositions I and J) or 4% (Compositions K and L) zeolite, varying amount of sodium sulphate, balance (water and minors) to 100%.

Commercial cotton swatches(10x10mm) were preconditioned with test detergent, soiled with CFT C09=Pigment/Oil, CFT CS32=Sebum/Oil, Engine Oil or Olive Oil, washed 30' at 30°C in a Lini-Test apparatus (100ml hard water 21.4°dH and 0.616g detergent; each beaker filled with cotton fabric (12x12mm), two test-swatches and two steel balls to provide mechanical last, rinsed with water, dried overnight. Performance was then instrumentally assessed.

The graph on page 3 shows no significant difference between Compositions A (Lipex/nil STPP), C (Lipex +25 wt% STPP) and D (nil Lipex/25 wt% STPP) in soil removal performance (according to Tuckey-Test), apart for pigment/oil stain CFT-09. As to removal of (lipase responsive) Olive Oil, the performance of Lipex thereon is very good, well above 65%, compared to other soils, irrespective of the STPP level.

PP (response to opponents' grounds of appeal, page 11, last paragraph) objected that the conditions had been chosen such that the lipase was not contributing to stain removal. The effect of Lipex was not apparent from the graphs; CTF C09 was used for demonstrating general detergency rather than lipase action; CFT 892 was partly sebum-based; and engine oil was hydrocarbon based, i.e. not lipase responsive. Lipase was effective

on olive oil, if not aged for 24 h. Since there was no difference between runs C and D, differing only in that run D did not contain Lipex, this data would not show that STPP level plays no role in stain removal performance of the lipase. The chosen conditions were such that lipase had no effect.

For the board, also this objection is not convincing, for the same reasons as for O1's Experimental Report 1. Further, at least olive oil is lipase responsive, but also for it the data shows that STPP level not always (significantly) affects Lipex performance. If dependent on wash conditions and load or soil, then the claimed composition does not always provide the invoked effect.

4.7.5 **O1's Experimental Report 2** (Section 1), filed to demonstrate that there is no unexpected improvement in stain removal when using Lipex at nil/low STPP level.

Base composition, almost identical to that of O1's Experimental Report 1, has 9 wt% LABS, 6 wt% AE/7EO, 0.5 wt% CMC, 4 wt% CP5, 25 wt% carbonate, and is balanced with sulphate, depending on absence or presence or level of enzyme and STPP; RA is > 7.5 (letter of 25 January 2018, second paragraph). Lipex is either nil or at a level of 0.08 or 0.6%, whilst STPP is nil or present at levels of 5 or 15%.

A detergent solution was made using **800**ml water of **38**°fH (Ca:Mg **5**:1) hardness, ensuring **5**gpl.

Commercial knitted **cotton** swatches stained with **cooked** (**burnt**) **beef**, with ballast, were washed in a Tergotometer (each beaker with **6** swatches per stains) with detergent solution for **30'** at **27**°C, agitation **100** rpm, rinsed 5' and dried overnight. Stain removal (as

SRI) is calculated after measuring L* a* b* before/ after wash.

The graph (% stain removal vs Lipex and phosphate level), compared to that of O1 Experimental Report 1, makes apparent that a higher performance level of about 70% to 80% is achieved. As same levels of Lipex and STPP were used, it might depend on higher hardness (38 vs 24°fH) and detergent concentration (5gpl).

The graph shows the Lipex effect for all three sets of bars, as Lipex performance increases when increasing its level from 0.08 to 0.6%. The graph also shows that a composition with 0.6% Lipex has a performance stably above 70% across the whole range 0-15% STPP. Thus, for this embodiment a trend of reducing lipase performance as STPP level increases is not seen. Moreover, the composition with 0.6% Lipex and 15% STPP has the same performance as a composition with 0.08% Lipex and nil STPP, and comparable performance of a composition with 0.6% Lipex and nil STPP, so that the phosphate level is not always, or at least not the sole factor, influencing the lipase performance. Thus, this data shows that a decrease in STPP level does not always improve lipase cooked beef removal from cotton. Concerning PP's objection against the conditions chosen, reference is made to the board's reasoning above.

4.7.6 **PP's Experimental Report 8**, filed in response to O1's Experimental Report 2 against the data on Stain Removal vs level of **STPP** (Section 1). Tests were made by using both O1's and PP's protocols, the latter including relevant test control samples showing the sensitivity of the method used, for comparison.

O1's protocol (Section 1) uses compositions of O1's Experimental Report 2 (Section 1), apart from 3 additional control samples (nil Lipex) vs 0%, 5%, 15% STPP. The same washing procedure was used.

For the PP, Graph 1 shows that the absence of standard deviation/error does not permit to draw valid statistical conclusions, the dynamic range of the tests being also very low as all products vary between 75% and 95% stain removal despite significant formulation differences, the poor sensitivity coming from a 10x10cm swatch used that was designed for use in a full scale washing machine and was too large to move freely around a small a Tergotometer pot. Also, O1 had used a 800ml Tergotometer with 6 cooked beef stains in 1 pot, which was 105x above the recommendation (AISE Laundry Detergent Guidelines, v.5.1. - April 2016) of 1 cooked beef stain in a 14L washing machine.

The board, however, notes that Section 1 of O1's Experimental Report 2 mentions the use of a standard WE5BBWKC- AISE 13 Cooked Beef on white cotton swatch in a Tergotometer, whilst a 10x10cm swatch is only mentioned in Section 3, where wash is carried out in a commercial wash machine. The recommendation document (AISE Laundry Detergent Guidelines, v.5.1. - April 2016) invoked by the PP is not mentioned in the patent nor is it on file. PP's objection is thus not convincing, the board being rather convinced that wash conditions considerably influence the performance on greasy soils, as acknowledged in E29, page 2, penultimate paragraph.

The results in Graph 2 from PP's Protocol show that:
- at 0% and 5% STPP and 0.08% Lipex 100L, a significant improvement vs nil lipase control is seen;

- compositions with 0.6% Lipex 100L show a significant improvement vs 0.08% Lipex 100L compositions and nil lipase controls;
- at 15% STPP level there is no significant difference (at 5% significant level) for the high or the low Lipex 100L compositions vs a 15% STPP nil lipase control.

For the board, in the PP's approach, apart that it is not possible to gather a lipase effect at 15% STPP, it is not apparent that a composition with more than 5 and up to **15** wt% STPP performs significantly better than a composition with more than 15% STPP, i.e. with a significant effect as shown for 0 and 5% STPP, let alone over Formulation #6 of E2 with 21% phosphate.

4.7.7 **O1's Unilever Experimental Report 4**, filed in reaction to PP's criticism in submission of 4 June 2018, that the stain removal work reported in O1's counter-data did not consistently correlate with the level of lipase present, suggesting the use of inappropriate wash conditions. The wash protocol now followed that of the "Lard First Wash Test" (patent [0031]-[0032]) (this is however contested in PP's Experimental Report 11, *infra*).

Test compositions were as tested before, included a control sample with nil Lipex for all STPP levels (0, 5, 10, **20** wt%). Flat **cotton** swatches (9x9cm), **lard**/ sudan red stain/soil and wash protocol were essentially as disclosed in the patent.

The graphs in Point 5.1 show lard stain removal at 3 enzyme levels. The three graphs do not show significant difference in lard stain removal obtained when reducing STPP level from 20 (as Formulation #6 of D2a) to 0 wt%. The graph of Point 5.2, different presentation of the

previous data, shows the sensitivity to Lipex levels, and makes even more apparent that, for the same enzyme level, no significant difference in lard stain removal is obtained when reducing STPP level from 20 to 0 wt%.

The compositions of Section 2 of PP's Experimental Report 8 and O1's Experimental Experimental Report 4 are the same for STPP levels of 0 and 5 wt%, apart from Lipex 100L used by the PP and Lipex 100T by O1. The knitted cotton swatches used by PP are however stained with dyed lard/dyed bacon/cooked beef, whilst the flat cotton swatches of O1 are lard-stained as described in the patent. Hence, this report of O1 does not concern a repetition of PP's Experimental Report 8. Instead, the two reports coexist, as invoked by O1. Thus, even upon accepting the results of PP for STPP levels of 0 and 5wt%, it may not be disregarded that Experimental Report 4 of O1 shows that claim 1 at issue encompasses non-working embodiments (compositions falling under claim 1 which do not perform as invoked).

4.7.8 **PP's Experimental Report 11** was filed to react to O1's Experimental Report 4 to demonstrate the performance of Lipex® 100L vs STPP levels at two lipase levels:
1. at 12,500 LU/l, lipase level according to the "Lard First Wash Test" in the patent, a level equivalent to 2.12ppm active enzyme through the wash; and
2. at 3,302 LU/l, a different lipase level used in O1's Experimental Report 4 and being equivalent to 0.56ppm active enzyme through the wash.
The lard stained swatches were prepared as in O1's Unilever Experimental Report 4.

In the graph on page 2 the performance is measured as "Delta % Lard Removal from Lipase", the error bars represent Standard Error calculated across all external

replicates, the delta lipase performance is expressed for each of the detergent formulations, the zero base line in the graph represents the performance of the formulation without lipase, to which the delta refers.

According to the conclusions drawn below the graph,
- at a Lipex level of 0.56ppm, the delta Lipex benefit at 5 and 12.5% STPP level is significantly larger than the benefit at 25% STPP level at 95% confidence; the delta Lipex benefit at 5% STPP level is significantly larger than the benefit at 12.5% STPP level at 90% confidence (p value is 0.0694), whilst
- at a Lipex level of 2.12ppm, the delta Lipex benefit at 5% STPP is significantly larger than the benefit of both the 12.5 and 25% STPP level at 95% confidence; and, the delta Lipex benefit at 12.5% STPP level is significantly larger than the benefit at 25% STPP level at 95% confidence.

4.7.9 Before comparing this data of PP with that of O1's Experimental Report 4, it is noted that in the latter the performance is expressed as SRI (Stain Removal Index) (not as Delta % SRI). In the graph (Point 5.2) of the latter report a delta SRI over the respective first (nil lipase) bar of each of the four sets of bars is visually apparent on the SRI scale from 0 to 100 (the actual values being given in the graphs of Point 5.1). The lipase effect is clearly visible. A composition with 5% STPP and 0.6ppm Lipex, the only one having comparable levels with PP's Experimental Report 11 (5% STPP and 0.56% Lipex), achieves a delta SRI over a composition with 5% STPP and nil Lipex (first bar of the second set) higher than 10 SRI units (72.2-57.5), namely 14.7 units, whilst compositions with 10% or 20% STPP and 0.6% lipase have respectively a delta SRI of 69.2-63.4 = 5.8 units and 70.2-60.9 = 9.3 units, i.e.

less than 10 SRI units. Hence, O1's Experimental Report 4 shows that the delta performance increases, in a similar way as in PP's Experimental Report 11, by going from 20 to 5 wt% STPP level, not however for a composition with 10% STPP over a composition with 20% (as in #6 of E2).

The graph of point 5.2 in O1's Experimental Report 4 also shows that it is not evident that Lipex functions more effectively in compositions containing low levels of phosphate builder, at least not for the embodiment with 0.3% Lipex, not reproduced in PP's Experimental Report 11, as a composition with nil or 10% STPP has a lower (6.3) or much lower (4.9) delta than that of a composition with 20% STPP (7.9).

Moreover, the graph of PP's Experimental Report 11 shows that there is no significant better performance (in terms of delta % ...) between a composition with 0.56ppm Lipex and 12.5 wt% STPP and a composition with 2.12ppm Lipex and 25 wt% STPP. There is little, if any, performance difference between a composition with 0.56ppm Lipex and 5 wt% STPP and a composition with 2.12ppm Lipex and 12.5 wt% STPP.

Hence, the graph of PP's Experimental Report 11 shows that the invoked trend of increasing Lipex 100L performance as STPP level is decreased across the range 25 to 5wt% STPP and is Lipex-dose dependent (the higher the Lipex level, the better the performance over nil Lipex). Claim 1 is however open, also as to the level of Lipex, and encompasses embodiments with vanishing level of Lipex, as argued by O1, which would thus not provide any unexpected performance gain.

4.7.10 The board thus concludes that:

- all test reports of PP and opponents were made or supervised by highly qualified formulators of enzymatic laundry compositions according to internal practices;
- all compositions of all reports fall under claim 1 at issue, which concerns a product, not a wash method or a use thereof for achieving a particular technical effect;
- the compositions of PP's Experimental Reports are more specific than that of claim 1 in terms of surfactants and additional components (CMC, polycarboxylate, acrylate/maleate copolymer, etc.). The level of phosphate in claim 1 is defined irrespective of Lipex level (a vanishing amount thereof being encompassed by claim 1) and of other builders/chelants levels, wich can influence the level of calcium ions available in the wash;
- the invoked improved performance, if any, is achieved by more specific compositions than that of claim 1, and used for specific soil removal under particular wash(load) conditions, rather than only the low builder level defined in claim 1. This appears to be confirmed by E29, teaching on page 2, that washing performance depends not only on the particular soiling agent and on the detergent composition, but also to a considerable extent on wash conditions used;
- the argument that the opponents used particular washing conditions is thus not convincing.

The board therefore comes to the conclusion that it is not proven that an improved performance is achieved across claim 1 at issue as a function of only the phosphate level, let alone over Formulation #6 of E2 with 21 wt% STPP.

4.7.11 It follows that the technical problem effectively solved across claim 1 has to be reformulated less

ambitiously, namely in the provision of a further efficient first wash lipolytic laundry composition.

4.8 Obviousness

4.8.1 The board shares the arguments of the opponents, e.g. of O1 (grounds of appeal, page 10, par. 4), that Formulation #6 of E2 concerning a laundry detergent composition comprising Lipex and *no zeolite* but (too much) *phosphate* (21 wt% of STTP) is the closest state of the art.

4.8.2 E2 teaches that its first wash lipolytic detergent composition (page 1, Detergent composition, first paragraph) may be formulated with *inter alia* less builders, namely 1-65%, or be unbuilt (essentially free of detergent builder) (page 1, "detergent composition", second paragraph), and still provides "*benefits such as stain removal, removal of fatty stains, whiteness maintenance, anti-redeposition or dinginess reduction*" (E2, third paragraph, first description page). For the board, this teaching implies that builders do not necessarily affect the performance of the first wash lipase of E2.

4.8.3 For the skilled person following the suggestion of E2 that the builder level might be reduced, Formulation #6 containing too much phosphate was the best starting point, and it was - in the board's view - obvious to reduce the level of phosphate at least for environmental reasons, as generally known e.g. from E36, which discloses the trends in the formulation of detergent compositions, and teaching a decline in the use of phosphate and zeolite from the late 70s and a concomitant rise in the use of layered disilicate (SKS-6). Upon comparing zeolite, phosphate, silicate

performance, E36 taught that SKS-6 (the board notes that SKS-6 is also one of the preferred builders of E2) was a suitable phosphate substitute with **no negative environmental impact** (pages 228-9, Figures 5-8 and corresponding description, "outlook", figure 11, table). Thus, the skilled person faced with the above problem would obviously replace phosphate in Formulation #6 of E2 with a corresponding level of (also preferred) SKS-6 (as in Figure 8/E36).

4.8.4 Alternatively, the composition of claim 1 at issue was, in the board's view, also obvious over E2 (description page 2, fourth paragraph, last clause, and fifth paragraph, eighth line thereof), hinting at formulating a first wash lipase of E2 as taught in E24. E2 thus motivated the skilled person to simply incorporate a Lipex into a formulation according to E24, *a fortiori* into an already formulated composition such as that of examples 10 (III to V) or 15 (IV and VI) (respectively containing as builder SKS-6 or alkaline silicate). Hence, by nothing more than following this hint in E2, the skilled person would have arrived at a composition with low phosphate level of claim 1 of AR3.

5. MR and AR1-AR2, AR4-7 - Inventive step

5.1 The board notes that the enzyme Lipex disclosed in E2 fulfils all lipase features of claim 1 of MR, AR1-AR2 and AR4-AR7. Furthermore Formulation #6 of E2, which also contains **15** wt% perborate and 1 wt% TAED (both being **bleaching agents**), 6 wt% LABS, 1 wt% fatty acid (a soap) and 4.4 wt% AE/EO7 (a nonionic surfactant) (i.e. **11.4** wt% **surfactants**), thus also contains the additional features of AR4, so that, irrespective of their admittance, the compositions of claim 1 of MR,

AR1-AR2 and AR4 are likewise obvious over E2 taken in combination with E36 or E24.

5.2 As E2 also suggests the use of more than 15 wt% surfactants and of an SRP (see Formulation #8 (SRP is an adjunct providing its known function also with Lipex, see e.g. E1, page 7, lines 15-16) (the more than additive performance sought to be proven by PP's Experimental Reports 5, 7, 8 and 10 is contested by O1 with the counter evidence Unilever Experimental Report 2, Section 3, and in any case has not been shown to be achievable across claim 1, as found in T 1259/17), it follows that also the composition of claim 1 according to each of AR5 to AR7, irrespective of their admittance, are in the board's view likewise obvious over E2 taken in combination with E36 or E24.

5.3 Thus, none of MR, AR1 to AR7 fulfills the requirements of Article 56 EPC.

6. Admittance of AR8 to AR11

6.1 These requests, which were filed for the first time on 24 September 2021, i.e. two weeks before the oral proceedings, comprise additional features compared to the requests previously on file. Thus, they are an amendment to the PP's appeal case and their admittance is subject to the party's justification for its amendment and may be admitted only at the discretion of the board according to Article 13(1) RPBA 2020 (Article 25(1) RPBA 2020).

6.2 As Article 13(2) RPBA 2020 does not apply, as the first summons was sent before 1 January 2020 (Article 25(2) RPBA 2020), Article 13(1) RPBA 2020 and Article 13 RPBA 2007 are applicable (Article 25 RPBA 2020; T 950/16,

reasons 3.2; T 715/16, reasons 2.2; T 1511/15, reasons 3). As the detailed wording in Article 13(1) RPBA 2020 reflects much of the case law developed under Article 13(1) RPBA 2007 (see T 32/16, reasons 1.1.2 and 1.1.3), the assessment can be based on Article 13(1) RPBA 2020.

6.3 According to Article 13(1), third sentence, RPBA 2020 the party shall provide reasons for submitting the amendment at this stage of the proceedings.

The board however does not find PP's arguments (in letter of 24 September 2021, page 2, second and third full paragraphs) to be a convincing justification for the extremely late filed new requests. If the PP wished to file requests in order to avoid objections set out by the opponents it could and should have done so at an earlier stage. PP's general statement (in letter dated 4 June 2018, page 2) that it might combine a number of auxiliary requests depending on which documents are later deemed to be relevant by the board, does not excuse the late filing. Rather, according to Article 12(3) RPBA 2020 (see also Article 12(2) RPBA 2007) the statement of grounds of appeal and the reply shall contain a party's complete appeal case specifying inter alia all the requests. This illustrates that the proprietor has to file its requests as soon as possible and is not allowed to wait until the board gives its preliminary opinion as regards the opponents objections. Moreover, PP did not react immediately to the board's communication. Rather, it reacted more then one year later, only two weeks before the oral proceedings. Thus, it could not be expected by the other parties that PP would file new requests.

6.4 Moreover, the criteria for the exercise of the discretion set out in Article 13(1) RPBA 2020 include

inter alia the suitability of the amendment to resolve the issues raised by another party in the appeal proceedings or by the board, and, in the case of an amendment to a patent, whether the party has demonstrated that the amendment *prima facie* overcomes said raised issues.

6.5 In the case at issue, at the oral proceedings the board exercised its discretion not to admit AR8 to 11 into the proceedings because all these claim requests were very late filed and brand new for the present case.

6.6 Furthermore the late filing was not justified and the requests were *prima facie* clearly not allowable for the following reasons:

6.6.1 Claim 1 of each of AR8 and 9 includes additional features as follows, respectively:
- "*the composition comprising from 1 to 50wt% one or more bleaching agent, and further comprising from 10 to 40% of one or more surfactants*"
- "*the composition comprising from 15wt% of one or more surfactants*".

Both these additional features were not foreshadowed in the original (dependent) claims but are taken from the description, apparently to seek to overcome the objection of lack of novelty over E8. For the board, they do however not overcome the objections under Article 123(2) EPC raised by O1 in letter of 31 December 2019 (points 6.1 and 6.2), in particular because there is no direct and unambiguous disclosure for the combination, with the most preferred lipase, of the two ranges for, respectively, surfactant and bleaching agent. These ranges are merely, independently (i.e. in separate lists) disclosed in the original

application (see pages 11, line 9, and 26, lines 20-22), with no pointer to their combination; furthermore the removing of the upper limit of the surfactant's range, originally disclosed (page 11, lines 8-10) as "preferably from 10 or even 15 wt% to 40 wt%", contravene Article 123(2) EPC.

Irrespective of these objections, the amendments in AR8 and AR9 would also not overcome the objection of lack of an inventive step over E2, seen that:
- Formulation #6 of E2 already contains 6 wt% LABS, 1 wt% fatty acids (soap), 4.4 wt% AE/7EO, thus more than 10 wt% surfactant, as well as 15 wt% perborate and 1 wt% TAED, i.e. more than 1 wt% bleaching agent; and
- E2 does not set any limit to the amount of surfactants (see e.g. Formulation #8 (with 29 wt% surfactants) and hints at formulating as disclosed in E24, which generally allows from 1 to 60 wt% surfactant (page 69, line 13).

AR8 and AR9 are thus found not *prima facie* clearly allowable.

6.6.2 Claim 1 according to AR10 comprises the additional feature "*the composition comprising from 0.05 to 5 wt% soil release polymer*", which was defined in original claim 7.

Such a claim 1 is distinguished from claim 1 of AR6 dealt with in the decision of the parallel case T 1259/17 in different values for the upper limit for e.g. phosphate (15 wt% instead of 10 wt%) and the RA (7.5 instead of 4).

In the present case too, **none** of the exemplified compositions of the patent comprises a soil release

polymer (**SRP**), and it has not been shown, apart from specific compositions of some of PP's Experimental Reports (5-Section 3, 7-Section 3, 8-Section 5, 10-Section 2), and it has been convincingly contested by the opponents with counter evidence (O1's Unilever Experimental Report 2 - Section 3), as dealt with in T 1259/17, that the presence of a soil release polymer (SRP) in the generic composition of claim 1 leads to any improvement across the breadth of claim 1. It follows in this respect for the board, that also claim 1 of AR10 does not overcome the objection of e.g. O1 (letter of 15 January 2018, page 9, penultimate full paragraph, see also points (3) and (4) on pages 10-11) that, since no technical effect is generally associated to the soil release polymer across the claimed low builder level, which thus only fulfils its known function in detergent compositions, claim 1 of AR10 was obvious over E2 (which discloses the known use of SRP, see Formulation #8) in combination with E36 or E24.

AR10 is thus found not *prima facie* clearly allowable.

6.6.3 Claim 1 according to AR11 comprises the additional features:
- "*the composition comprising from 0.05 to 5 wt% soil release polymer*", defined in original claim 7;
- "*and comprising non-ionic surfactant in amounts from 0.5 to 20 wt%*", not foreshadowed in the original dependent claims but disclosed in the original description in a separate list, independently from the lipase and the soil release polymer (page 14, lines 27-29).

Apart that the board does not see any direct and unambiguous disclosure for the combination of the two additional features of claim 1 according to AR11

(Article 123(2) EPC), the board considers that regarding inventive step the same conclusion already drawn for claim 1 of AR10 applies to the composition of claim 1 of AR11, as Formulation #6 of E2 already contains 4.4wt% AE/7EO.

AR11 is thus found not *prima facie* clearly allowable.

7. AR 12 - Admittance and *prima facie* allowability

7.1 The admittance of this request, filed at a late stage during the oral proceedings before the board, is at the board's discretion under Article 13(1) RPBA 2020 (see above point 6.2).

7.2 Claim 1 of this request comprises all of the features of claim 1 of upheld AR7 plus the features in bold character:

"*1. A granular laundry detergent composition comprising a lipase which is a polypeptide having the amino acid sequence of positions 1-269 of SEQ ID NO:2 of US 5869438 with the mutations T231R and N233R with reference to said SEQ ID NO:2*
the composition having a reserve alkalinity of greater as herein defined than 7.5, and
the detergent composition comprising ~~up to~~ 15 ***less than 8*** *wt% aluminosilicate (anhydrous basis) and/or phosphate builder (anhydrous basis),*
and wherein the total level of weak builders selected from layered silicates (SKS-6), citric acid, citrate salts and nitrilo triacetic acid or salt thereof is below 8 wt%,
the composition comprising from 10 to 40% of one or more surfactants."

7.3 Claim 1 of this request however does *prima facie* not fulfill the requirements of Articles 123(2) and 56 EPC for the following reasons:

7.3.1 Claim 1 includes the features of original claims 1 (which discloses the compositional frame), 3 (< 8 wt% phosphate and/or zeolite), 8 ("preferably *granular*") and 9 (*laundry*) as well as additional features from the description, namely from page 6, first paragraph (Lipex); page 10, lines 21-23 (< 8 wt% weak builder); and page 11, line 9 (surfactants level).

7.3.2 Since original claims 8 and 9 refer only generically to previous original claim 3, and since the features taken for the description are selected from independent, separate lists of compositional options being, apart from the most preferred Lipex, not of general application, and since the compositions of Examples B, C, F and G, the only ones comprising Lipex and surfactants, strong and weak builder levels as now claimed, all comprise also further components such as CMC, polyacrylate or copolymer MA/AA, photobleach and perfume, it is *prima facie* apparent that the now claimed composition is not directly and unambiguously disclosed nor hinted at as such in the original description, and indeed represents a non-allowable intermediate generalisation of Examples B, C, F and G (Article 123(2) EPC).

7.3.3 The new limitations restrict the scope of claim 1 as granted towards compositions used in PP's experimental reports but are in the board's view not sufficient to change the problem solved, as also the counter-data of the opponents are based on compositions meeting the new requirements for weak builder and surfactants.

7.3.4 Furthermore Formulation #6 of E2 comprises **2** wt% **sodium citrate** as a weak builder, and **11.4** wt% surfactants, and thus fulfils the new and further (also to phosphate level) limitations introduced in claim 1. Moreover, as only some of the further (than those now defined in claim 1) builders listed in E2 (description page 1, third last paragraph) or in E24 (page 81, third paragraph) are limited, claim 1 of AR12 does not distance sufficiently from E2/Formulation #6, nor from E24/Formulation 15 (VI) (comprising none of the builders mentioned in claim 1 but alkaline silicate, if any).

7.3.5 Thus, also the composition of claim 1 of AR12 is in the board's view *prima facie* obvious for the skilled person over E2 in combination with E36 or E24/Formulation 15/ VI.

7.4 Therefore, the board exercised its discretion not to admit AR12 into the proceedings.

8. *Conclusion*

As none of the requests at issue, if admitted, is *prima facie* clearly allowable under Article 56 EPC, the board has to accede to opponents request to revoke the patent.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

A. Pinna J.-M. Schwaller

Decision electronically authenticated