

Internal distribution code:

- (A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [X] To Chairmen
(D) [-] No distribution

**Datasheet for the decision
of 19 April 2018**

Case Number: T 1409/16 - 3.3.06

Application Number: 10188928.5

Publication Number: 2272941

IPC: C11D3/22

Language of the proceedings: EN

Title of invention:

Laundry composition

Patent Proprietor:

The Procter & Gamble Company

Opponents:

Henkel AG & Co. KGaA
Novozymes A/S

Headword:

Blocky CMC I / Procter & Gamble

Relevant legal provisions:

EPC Art. 100(a), 100(b), 52(1), 54, 56

Keyword:

Proper construction of "either ... or" (Reasons, 1.3 ff.)

Insufficiency of disclosure (no)

Novelty - (yes) "extrinsic characteristic" (G 1/92) of an allegedly novelty-destroying commercial composition only accessible by subjecting said prior art composition to a kind of reverse engineering (by fractionation) based on hindsight (Reasons, 6)

Inventive step - (yes)

Decisions cited:

G 0001/92

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 1409/16 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 19 April 2018

Appellant: Henkel AG & Co. KGaA
(Opponent 1) Henkelstrasse 67
40589 Düsseldorf (DE)

Representative: Henkel AG & Co. KGaA
CLI Patents
Z01
40191 Düsseldorf (DE)

Respondent: The Procter & Gamble Company
(Patent Proprietor) IP Department
One Procter & Gamble Plaza
Cincinnati, OH 45202 (US)

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

Party as of right: Novozymes A/S
(Opponent 2) Krogshøjvej 36
2880 Bagsværd (DK)

Representative: Potter Clarkson LLP
The Belgrave Centre
Talbot Street
Nottingham NG1 5GG (GB)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 12 April 2016
rejecting the opposition filed against European
patent No. 2272941 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman B. Czech
Members: M. Maremonti
 J. Hoppe

Summary of Facts and Submissions

I. The appeal by the Opponent 1 lies from the decision of the Opposition Division to reject the two oppositions against the European Patent No. 2 272 941.

II. The sole independent claim of the patent as granted reads as follows:

"1. A composition being a laundry treatment composition or component thereof, comprising:

- a substituted cellulose having a degree of substitution, DS, of from 0.01 to 0.99 and a degree of blockiness, DB, such that either $DS+DB$ is of at least 1.00 or $DB+2DS-DS^2$ is of at least 1.20 and*
- a laundry adjunct ingredient."*

Dependent claims 2 to 10 are directed to more specific embodiments of the composition according to claim 1.

III. The Opponents had raised objections on the grounds of Articles 100(a) and (b) EPC.

The evidence cited during the opposition procedure includes

D1: WO 2007/087243 A2;

D2: WO 2004/041982 A1;

D3: EP 1 867 708 A1;

D4: V. Stigsson *et al.*, *The influence of the solvent system used during manufacturing of CMC; Cellulose*, 2006, 13, pages 705 to 712;

D16: Technical Report filed by the Applicant on 7

November 2012 (during substantive examination);
and

D19: "Oxford Dictionary of English Grammar", Oxford University Press Inc, New York, 1994, entry "disjunctive".

The Opposition Division came *inter alia* to the conclusions

- that Article 100(b) EPC did not prejudice the maintenance of the patent as granted,
- that the subject-matter of claim 1 as granted was novel over each of documents D1, D2 and D3 and
- that the subject-matter of claim 1 as granted involved an inventive step in view of D3 taken as the closest prior art.

IV. In its statement of grounds, the Appellant (Opponent 1) *inter alia* contested the reasoning given by the Opposition Division and maintained that the invention was insufficiently disclosed, that the claimed subject-matter lacked novelty over each of documents D1, D2 and D3 and that it did not involve an inventive step.

V. In its reply, the Respondent (Patent Proprietor) rebutted the objections and arguments of the Appellant and defended the patent as granted. It nevertheless filed auxiliary claim requests 1 to 11.

VI. The parties were summoned to oral proceedings. In preparation therefor, the Board issued a communication including its preliminary opinion on salient issues, expressing *inter alia* that the claimed subject-matter appeared to be sufficiently disclosed and novel.

- VII. The party as of right (Opponent 2) announced by letter dated 8 March 2018 that it would not make any submissions and would not be represented at the oral proceedings.
- VIII. In a letter dated 12 March 2018, the Appellant replied to the Board's comments and maintained all previously raised objections.
- IX. Under cover of a letter dated 28 March 2018, the Respondent also replied to the Board's comments and filed, as document D20, a series of graphical plots. It also replaced the pending auxiliary claim requests 2, 4, 5, 8, 10 and 11 by corrected versions thereof.
- X. Oral proceedings before the Board were held on 19 April 2018. The debate focused on the pending objections under Article 100(a) and (b) EPC raised with regard to claim 1 of the patent as granted.
- XI. Final Requests

The **Appellant** requested that the decision under appeal be set aside and that the patent be revoked.

The **Respondent** requested that the appeal be dismissed and that the patent be maintained as granted (main request) or, if this is not possible, that the patent be maintained on the basis of the claims according to one of the following auxiliary requests, to be taken in their numerical order:

- auxiliary requests 1, 3, 6, 7 and 9 as filed with the reply to the statement of grounds of appeal and
- auxiliary requests 2, 4, 5, 8, 10 and 11 as filed with letter of 28 March 2018.

XII. The Appellant's arguments of relevance for the present decision can be summarised as follows.

Objections under Article 100(b) EPC

- The "either ... or" wording used in claim 1 had to be clearly read in the sense that either the first (additive) or the second (quadratic) inequality mentioned in claim 1 at issue had to be fulfilled, but not both (this understanding is referred to herein below as **exclusive or**). No interpretation in the light of the description was thus necessary.
- If the Respondent had intended to express that the first inequality, the second inequality or both had to be met (this understanding is referred to herein below as **inclusive or**), it would have adopted the "and/or" wording.
- Claim 10 of the patent in suit, wherein the usual "and/or" wording was used to express an *inclusive or*, confirmed that "either ... or" in claim 1 had to be read as an *exclusive or*.
- No clear information could be gathered from the description as regards the meaning of the "either ... or" wording. Paragraphs [0035] to [0037] disclosed combinations of DS and DB values (DS = degree of substitution; DB = degree of blockiness) not fulfilling any of the two inequalities of claim 1 at issue.
- Claim 1 thus required that the substituted cellulose component of the composition had to meet only one of the mentioned inequalities but not both.
- However, the example of the patent only disclosed

carboxymethylcelluloses ("CMCs" in the following) fulfilling either none or both of the two inequalities according to claim 1.

- Also document D4, cited in paragraph [0051] of the contested patent, only disclosed CMCs fulfilling both inequalities.
- The skilled person thus found insufficient guidance in the patent in suit as regards the preparation of substituted celluloses meeting only one of these two inequalities.
- This lack of disclosure was also virulent in case the "*either ... or*" wording were regarded as an *inclusive or* since the invention had to be reproducible over the whole claimed breadth.
- Paragraph [0051] of the contested patent disclosed that many parameters influenced the DB of a substituted cellulose. No guidance was, however, provided as regards the appropriate setting of these parameters.
- A CMC falling within the ambit of claim 1 at issue could only be obtained by the Appellant by a cumbersome and "accidental" fractionation of the commercial product Finnfix® BDA mentioned in the examples of the patent in suit (see paragraph [0108]).
- However, such a fractionation method was not disclosed in the patent in suit. The person skilled in the art could thus only proceed by trial and error in attempting to prepare a substituted cellulose meeting the requirements of claim 1 at issue.

Objections under Article 100(a) EPC

- The fractionation of the commercial CMC product Finnfix® BDA used in the examples of documents D1 to D3 (and in the patent in suit, see paragraph [0108]) led to the isolation and identification of a fraction F1 characterised by a pair of values (DS,DB) meeting only the first inequality mentioned in claim 1 at issue.
- Considering the "open" formulation of claim 1 using the term "*comprising*", the laundry compositions disclosed in several examples of D1 to D3 including Finnfix® BDA were novelty-destroying for the subject-matter of claim 1 at issue.
- The patent in suit contained no demonstration of a technical effect obtained when using substituted celluloses fulfilling only one of the two inequalities of claim 1 at issue.
- Therefore, no technical problem could be formulated and no inventive step could be acknowledged.

XIII. The Respondent essentially counter-argued as follows.

Objection under Article 100(b) EPC

- The "*either ... or*" wording in claim 1 at issue was ambiguous, as confirmed by e.g. D19. It was thus necessary to consult also the description when seeking to attribute a more precise meaning to said wording.
- Considering the examples of the patent in suit, the person skilled in the art would immediately understand that said wording in claim 1 had to be understood as an *inclusive or*.

- The fact that in claim 10 of the patent the "and/or" terminology was used to express an *inclusive or* had no bearing on this conclusion.
- Paragraphs [0034] to [0037] of the contested patent had to be read in context with claim 1. The person skilled in the art would thus not contemplate couples of (DS,DB) values that did not satisfy at least one of the two inequalities defined in the claim.
- However, as confirmed by D4, the person skilled in the art of cellulosic polymer chemistry was able to independently tailor DS and DB values. Even substituted celluloses meeting only one of the two inequalities could thus be readily synthesised.
- The fractionation of the product Finnfix® BDA carried out by the Appellant showed that a desired substituted cellulose could be obtained by using (other) techniques well-known in chemistry.

Objections under Article 100(a) EPC

- None of D1 to D3 mentioned that Finnfix® BDA comprised substituted celluloses as defined in claim 1 at issue.
- The fact that Finnfix® BDA could be fractionated to obtain an artificially distributed sample of CMC falling within the ambit of claim 1 did not mean that such information had been made available to the public.
- The claimed compositions were, thus, novel.
- Document D3 disclosed the closest prior art.

- The burden to prove that no technical effect was plausibly attained across the full breadth of claim 1 lied with the Appellant, who had not, however, discharged it.
- Having obtained a fraction of CMC falling within the ambit of claim 1, the Appellant did not, however, make any attempt to show that with such a fraction no improvement in antiredeposition properties could be achieved.
- The claimed compositions thus involved an inventive step.

Reasons for the Decision

Main request - the meaning of "either ... or" in claim 1 as granted

1. The parties disagreed as regards the meaning to be given to the feature of claim 1 at issue expressed by the sentence "**either** $DS+DB$ is of at least 1.00 **or** $DB+2DS-DS^2$ is of at least 1.20" (emphasis added by the Board; complete wording of the claim under II, *supra*).
- 1.1 In particular, the Appellant submitted that the used "either ... or" wording was unambiguous and implied that either the first (additive) or the second (quadratic) inequality had to be fulfilled, but not both.

If the Respondent had intended to express that the first inequality, the second inequality or both had to be met, it would have adopted the "and/or" wording commonly used for that purpose in drafting patent applications, this view being corroborated by the fact

that such wording is used in claim 10 of the contested patent.

1.2 The Respondent argued on the basis of the dictionary excerpt D19 that the "*either ... or*" wording was *per se* ambiguous, since it could be used in the sense of an exclusive or as well as in the sense of an inclusive or. Taking into account the description of the patent in suit, particularly the examples, it was immediately apparent that in claim 1 said wording expressed an *inclusive or*.

1.3 For the following reasons, the Board holds that in the context of claim 1 at issue the "*either ... or*" wording expresses an *inclusive or*.

1.3.1 Document D19 clearly shows, by means of example sentences taken from everyday language that both "*exclusive disjunctions*" and "*inclusive disjunctions*" may be expressed by the "*either ... or*" wording.

Claim 1 is, therefore, ambiguous and needs to be construed in this respect, taking into account the entire patent in suit.

1.3.2 For the Board, the fact that in another claim of the contested patent (claim 10) another expression ("*and/or*") is used (in the sense of an *inclusive or*) to refer to possible alternatives not concerning the substituted cellulose component (but the amount and type of builder in the composition) is not, as such, a compelling reason for concluding that the "*either ... or*" wording used in claim 1 must have a different meaning, i.e. that it expresses an *exclusive or*. There is no absolute obligation to use a fully coherent terminology for expressing given features if the latter can be expressed in different ways.

1.3.3 Moreover, in the description of the patent in suit, particularly in the examples, highly blocky CMC (HB CMC) is expressly qualified as a substituted cellulose "*in accordance with the invention*" (see paragraphs [0111] and [0116] to [0118]). The specific HB CMC referred to is characterized by a pair of (DS,DB) values (DS: 0.76, DB: 0.50, see paragraph [0110]) which are such that both the additive and the quadratic inequality of claim 1 at issue are met.

For the Board, the person skilled in the art reading the patent would certainly not conclude that the "*either ... or*" wording of claim 1 expresses an *exclusive or*, since this would mean that the exemplified (hence particularly preferred) embodiments would be excluded from the ambit of claim 1.

1.3.4 Paragraphs [0034] to [0037] of the patent in suit, invoked by the Appellant, do not contradict this interpretation. These paragraphs merely define ranges of possible DS values permitting to satisfy the additive inequality of claim 1 (see e.g. paragraph [0035], first line).

It is acknowledged that, as pointed out by the Appellant, paragraph [0037] of the patent indicates that "*the substituted cellulose [...] may have a DS+DB of at least 0.85*", i.e. less than 1.00 as prescribed by claim 1.

This possibility, presumably still mentioned due to a lack of adaption of the description before grant, is, however, clearly excluded from the scope of claim 1 at issue. Moreover, for the Board, the presence of the quoted statement in the description has no apparent bearing on the proper interpretation of the "*either ...*

or" wording in claim 1 at issue.

- 1.3.5 Finally, the Board holds that the "either ... or" wording could only be considered as expressing an *exclusive or* in cases where the two situations referred to are, due to their very nature, mutually exclusive, i.e. incompatible with each other.

An example would be "a tree bearing either apples or walnuts". It is evident (excluding biotechnological manipulations) that if the tree bears apples it does not bear walnuts, and *vice versa*. In the present case, however, the mathematical analysis of the two inequalities mentioned in claim 1 reveals that they are **not** mutually exclusive. This is not in dispute. As a matter of fact, the graphs in D20 show that in the DS range prescribed by claim 1 at issue (from 0.01 to 0.99), the vast majority of the possible (DS,DB) pairs of values fulfils either both (cf. D20, plot 5, white area) or none of the two inequalities (cf. D20, plot 5, grey area). Only a (very small) subset of (DS,DB) pairs exists, for which one inequality is met but not the other (cf. D20, plot 6, white areas).

- 1.3.6 The Board therefore concludes that the sentence "*either $DS+DB$ is of at least 1.00 or $DB+2DS-DS^2$ is of at least 1.20*" of claim 1 at issue has to be read in the sense that the (DS,DB) values have to be such as to satisfy **at least one** of the two mentioned inequalities (i.e. in the sense of an *inclusive or*).

Main request - sufficiency of the disclosure

2. The insufficiency objection of the Appellant was essentially based on the argument that the patent in suit did not contain sufficient guidance to permit the preparation of substituted celluloses satisfying only

one of the inequalities mentioned in claim 1 as granted. This objection allegedly also applied to claim 1 as construed by the Board (1.3.6, *supra*) since the invention must be sufficiently disclosed across the whole breadth claimed.

3. The Respondent submitted that the person skilled in the art knew how to prepare substituted celluloses having the desired DS and DB.
4. For the Board, the insufficiency objection raised is not convincing, considering the following:
 - 4.1 During the oral proceedings, the Respondent submitted that the person skilled in the art was perfectly able to control the DS value by acting on the proportion of the reactants (stoichiometry) during the cellulose substitution reaction. This was not contested by the Appellant.
 - 4.2 In paragraph [0051] of the patent in suit it is, moreover, expressly indicated that the DB of the substituted cellulose may be tailored by acting on the reaction conditions in the synthesis of the substituted cellulose (e.g. the solvent used, the rate of addition of the reactants, the alkalinity of the reaction medium). With reference to D4 and two other documents it is stated that "*[t]he synthetic process can be optimised to control the DB...*".
 - 4.3 During the oral proceedings, the Appellant argued that the number of parameters mentioned in paragraph [0051] was too high, thus rendering too complex the identification of process conditions suitable for preparing substituted celluloses meeting only one of the two inequalities according to claim 1. Also the two documents cited in addition to D4 did not contain

useful information.

4.4 For the Board, these statements of the Appellant are, however, mere allegations that were not corroborated by any genuine attempt to reproduce such substituted cellulose by following the indications given in the contested patent, particularly in paragraph [0051]. And this despite the fact that the Opposition Division had already come to the conclusion that the contested patent was sufficient (see Reasons, point 2, of the impugned decision) so that the Appellant had been aware of the need to provide further evidence. Neither did the Appellant point out in substantiated manner why the further prior art documents mentioned in paragraph [0051] of the patent were of no help.

4.5 The Board concludes that the Appellant did not discharge the burden of proof, resting with it, that compositions meeting only one of the two inequalities were insufficiently disclosed. In the absence of an objection based on verifiable facts, the Board thus does not see any reason for reversing the finding of the Opposition Division that the person skilled in the art, using the information provided in the contested patent, either expressly or by reference to the prior art, and taking into account common general knowledge, would be able to control the (DS,DB) values so as to obtain substituted celluloses over the whole breadth of claim 1 at issue without an undue experimental burden.

4.6 Hence, in the Board's judgement the ground of opposition under Article 100(b) EPC does not prejudice the maintenance of the patent as granted.

Claim 1 as granted - Novelty

5. The Appellant raised novelty objections against claim 1

as granted in view of each of D1 to D3, considering that each of these documents disclosed examples of laundry compositions including various laundry adjunct ingredients and the commercially available CMC "Finnfix® BDA".

By fractionation of said Finnfix® BDA, the Appellant obtained a fraction F1 which was characterised by a DS of 0.9 and a DB of 0.14, so that $DS + DB = 1.04$, i.e. meeting the additive first inequality of claim 1.

The Appellant went on to argue that since claim 1 was formulated in an open manner ("*comprising*"), all the compositions of D1 to D3 containing Finnfix® BDA also comprised said fraction F1 and were, thus, novelty-destroying for the subject-matter of claim 1.

6. The Board does not find these arguments convincing for the following reasons.
 - 6.1 Polymeric components (here: substituted celluloses), usually comprise individual molecules differing in terms of e.g. chain length and molar mass. A physical property measured and expressed as a single discrete value attributed to a polymeric component is thus often an average value determined over the totality of the individual polymeric molecules present.
 - 6.2 Therefore, the Board holds that when a polymer (CMC in Finnfix® BDA) is known to be a component of a prior art composition (cf. D1: page 40, line 2; D2: Table A, pages 25 to 26, penultimate entry; D3: page 17, line 15), intellectually splitting said polymeric component into fractions and attributing to one of these fractions (necessarily composed of individual molecules differing in terms of e.g. chain length and molar mass) a physical property (discrete numerical value)

distinguishing this fraction from other such fractions, is an artificial approach based on hindsight.

- 6.3 The DS and DB values (properties) of the substituted cellulose (polymer) may be obtained using the methods respectively described in paragraphs [0029] and [0044] of the contested patent. The same disclosure is also found in D4 (cf. pages 707 to 708) referred to in paragraph [0051] of the contested patent. These analyses produce single, discrete values for DS and DB, respectively.
- 6.3.1 It was common ground between the parties that the discrete values that are obtained when analysing DS and DB of the overall CMC component of Finnfix® BDA do not fulfill any of the inequalities of claim 1 at issue (see the values for Finnfix® BDA indicated in the patent in suit, paragraphs [0108] and [0110]).
- 6.3.2 What would be thus made available to the public by an analysis of the compositions described in the examples of D1 to D3 (cf. D1: examples on pages 35 to 40; D2: Table A on pages 25-26; D3: examples 1 to 12 on pages 13 to 17) are the DS and DB values of the overall CMC component of Finnfix® BDA and not the DS and DB values of some fractions of this component obtained by arbitrarily splitting up the latter.
- 6.4 This conclusion is in accordance with G 1/92 (OJ 1993, 277, Conclusion) which stipulates that "*the chemical composition of a product is state of the art when the product as such is available to the public and can be analysed and reproduced by the skilled person*".
- 6.5 More particularly, according to G 1/92 (Reasons, 3), "*a commercially available product per se does not implicitly disclose anything beyond its composition or*

*internal structure. **Extrinsic characteristics**, which are only revealed when the product is exposed to interaction **with specifically chosen outside conditions**, e.g., reactants or the like, in order to provide **a particular effect or result** or to discover **potential results or capabilities**, therefore point beyond the product per se as they are **dependent on deliberate choices being made**" (emphasis by the Board).*

6.6 In the present case, the Board regards the fractionation of Finnfix® BDA as carried out by the Appellant as a kind of reverse engineering based on hindsight and revealing a particular ("extrinsic" within the meaning of G 1/92) property of the Finnfix® BDA containing compositions: In the knowledge of the invention, "deliberate choices" were made "with specifically chosen outside conditions" in order to obtain "a particular result" in terms of DS and DB values.

Information revealed by following this procedure does, however, not correspond to what can be considered to having been made available to the public by an analysis of the chemical composition of Finnfix® BDA in the sense of G 1/92.

6.7 Hence, the Board concludes that none of D1 to D3 makes available to the public (Article 54(2) EPC) a composition according to claim 1 as granted.

6.8 Therefore, in the Board's judgement, the subject-matter of claim 1 and, consequently, the subject-matter of claims 2 to 10 dependent thereon, are not objectionable for lack of novelty either (Articles 100(a), 52(1) and 54(1), (2) EPC).

Main request - Inventive step

7. The invention

7.1 The invention concerns a laundry treatment composition comprising a substituted cellulose and a laundry adjunct ingredient (see paragraph [0001] and claim 1).

7.2 In the description of the patent in suit the following is indicated:

"[0002] When articles such as clothes and other textiles are washed, cleaning performances may be affected by the redeposition of the soil onto the fabrics ... Already in the 1930's it was discovered that a substituted polysaccharide, carboxymethyl-cellulose (CMC), was particularly suitable as an antiredeposition agent ..."

"[0003] Although there are nowadays many types of commercial substituted celluloses, the substituted celluloses used in the laundry compositions have remained substantially the same for the past decades."

"[0004] The inventors have now surprisingly found that a specific class of substituted celluloses having a specific degree of substitution (DS) and degree of blockiness (DB) had unexpected better antiredeposition performance when compared with the substituted celluloses usually present in the commercial detergent composition."

8. Closest prior art

8.1 It was common ground between the parties that document D3 could be regarded as representing the closest prior art for the subject-matter of claim 1. Considering the similarities between the patent in suit and D3 in terms

of issues addressed and detergent compositions disclosed, the Board has no reason to take another stance.

8.2 Indeed, D3 (paragraph [0001]) discloses cleaning compositions comprising cellulose derivatives. Such cellulose derivatives may preferably have DS from 0.3 to 0.9, CMC being particularly preferred (paragraph [0022]), and act as antiredeposition aids (paragraph [0024]). Examples 1 to 12 (paragraphs [0054] and [0055]; page 17, line 15) disclose laundry compositions comprising various laundry adjunct ingredients and the commercially available CMC Finnfix® BDA in various concentrations.

8.3 Any of the compositions disclosed in examples 1 to 12 of D3 may thus be considered to represent a most appropriate starting point for the purpose of assessing inventive step.

9. Technical problem

According to the Respondent, the technical problem consisted in providing laundry compositions with an improved antiredeposition performance (see also the patent in suit, paragraph [0004]).

10. Solution

As a solution to this technical problem, the patent in suit proposes the "*laundry treatment composition or component thereof*" according to claim 1, comprising "*a substituted cellulose having a degree of substitution, DS, of from 0.01 to 0.99*", which is characterised in particular in that said substituted cellulose has (emphasis added) "*a degree of*

blockiness, DB, such that either $DS+DB$ is of at least 1.00 or $DB+2DS-DS^2$ is of at least 1.20".

11. Success of the solution

11.1 The Board notes that the examples of the patent in suit carried out with a composition including a CMC component ("*HB CMC*") fulfilling the requirements of claim 1 (satisfying both inequalities of claim 1, see Table in paragraph [0110]) show an improvement in the antiredeposition performance when compared to compositions comprising the CMC component (Finnfix® BDA) as used in the examples of D3 (see the results in the Table of paragraph [0114] and the comments thereon in paragraph [0115]). As mentioned under 6.3.3, *supra*, it was common ground that Finnfix® BDA has DS and DB values not meeting any of the inequalities of claim 1 at issue.

Also the technical report D16 submitted by the Respondent demonstrates improved results obtained with CMCs characterised by (DS, DB) values meeting both inequalities of claim 1 at issue.

The Board is thus satisfied that improved antiredeposition performances are obtained with compositions comprising substituted celluloses having (DS, DB) values meeting both inequalities of claim 1 at issue. This is not in dispute.

11.2 The Appellant, however, argued that since HB CMC as used in the contested patent as well as all CMCs tested according to D16 had (DS, DB) values satisfying both inequalities of claim 1, a technical effect was not shown over the whole breadth of claim 1, i.e. not for those substituted celluloses that met only one of said two inequalities.

11.3 The Board, however, firstly observes that, as already mentioned under 1.3.5, *supra*, the subset of (DS,DB) pairs, for which one inequality is met but not the other is very small (cf. D20, plot 6, white areas), whereas the vast majority of the possible (DS,DB) pairs of values fulfils either both (cf. D20, plot 5, white area) or none of the two inequalities (cf. D20, plot 5, grey area).

11.4 Moreover, the Board holds that in the present case the burden of proof lies with the Appellant, who was aware of this in particular considering

- that it is expressly indicated in paragraph [0004] of the patent in suit, that the substituted celluloses according to the invention "*have an unexpected better antiredeposition performance when compared with the substituted celluloses usually present in the commercial detergent composition*"
- and that the Opposition Division concluded (see impugned decision, Reasons 4.3, page 9, third paragraph) that "*the technical effect associated with the difference over D3 is an enhanced anti-redeposition performance*" and that (see *loc. cit.*, page 9, second paragraph) "*[a]lthough the opponents have objected that an effect has not been shown across the whole scope of the opposed claim they have not provided any data to show that an effect cannot be attained*".

11.5 The Board further notes that although having been in possession of a CMC fraction F1 meeting only one of the inequalities mentioned in claim 1 at issue (see 5, *supra*), the Appellant did not even make an attempt to show that no improvement of the antiredeposition

performance could be achieved when using such a fraction.

11.6 In the absence of any evidence based on verifiable facts, the Board has not, therefore, any reason to doubt that improved antiredeposition performances are obtained over the whole breadth of claim 1 at issue, i.e. for all the substituted celluloses encompassed by the definition given in claim 1 as granted.

12. Non-obviousness of the solution

12.1 The subject-matter of claim 1 differs from the compositions as disclosed in the examples of D3 in that it comprises a substituted cellulose having DS and DB values such that at least one of the inequalities

- *"DS+DB is of at least 1.00"*
- *"DB+2DS-DS2 is of at least 1.20"*

is met.

12.2 What remains to be decided is thus whether or not, having regard to the state of the art and common general knowledge, it was obvious to the skilled person seeking to solve the posed technical problem (9, *supra*) to modify a composition according to one of the examples of D3 by replacing the substituted cellulose component contained therein such as to arrive at a composition comprising a substituted cellulose component meeting at least one of said two inequalities.

12.3 The Appellant based its inventive step attack solely on the argument that a technical effect in terms of improved antiredeposition performance was not shown over the whole breadth of claim 1, i.e. for those

compositions that only met one of the two inequalities.

- 12.4 However, for the reasons already mentioned under 11.3-11.6, *supra*, this argument does not succeed.
- 12.5 The Board observes that none of the prior art documents referred to by the Appellant fairly suggests modifying the compositions according to D3 in a manner leading to a composition according to claim 1 at issue.
- 12.6 D1 and D2 disclose, like D3, laundry compositions comprising typical laundry adjuvant ingredients and the commercially available CMC Finnfix® BDA (cf. D1: examples on pages 35 to 40; D2: Table A on pages 25-26). D1 and D2, like D3, do not suggest the use of other substituted cellulose having defined DS and/or DB values.
- 12.7 D4 discloses the influence of the solvent system used during the manufacturing of CMC. D4 does not address or mention the use of CMCs as component of laundry compositions.
- 12.8 The Board therefore concludes that the prior art and the relevant common general knowledge did not induce the person skilled in the art to solve the technical problem posed (9, *supra*) by modifying the compositions of D3 in a manner leading to a composition as claimed, which thus involves an inventive step.
13. Hence, in the Board's judgement, the subject-matter of claim 1 and, consequently, the subject-matter of claims 2 to 10 dependent thereon, are also not objectionable for lack of inventive step (Articles 100(a), 52(1) and 54(1), (2) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar:

The Chairman:



D. Magliano

B. Czech

Decision electronically authenticated