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File Number: T 457/88 - 3.3.1
Application No.: 81 305 266.9
Publication No.: 0 051 986
Title of invention: Detergent compositions

Classification: C11D 1/86

DECISION
of 8 January 1991

Proprietor of the patent: The Procter & Gamble Company

Opponent: Henkel KGaA

Headword: Detergent composition/PROCTER & GAMBLE

EPC Article 54

Keyword: "Novelty (no)"

Headnote



Case Number : T T 457/88 - 3.3.1

DECISION
of the Technical Board of Appeal 3.3.1
of 8 January 1991

Appellant :
(Opponent)

Henkel KGaA
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4000 Düsseldorf 1 (DE)

Respondent :
(Proprietor of the patent)

The Procter & Gamble Company
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Representative :

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Procter & Gamble (NTC) Limited
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Decision under appeal :

Interlocutory Decision of Opposition Division of
the European Patent Office dated 20 July 1988
maintaining the European patent No. 0 051 986
in amended form pursuant to Article 106(3) EPC.

Composition of the Board :

Chairman : K. Jahn
Members : J. Jonk
C. Holtz

Summary of Facts and Submissions

I. The grant of European patent No. 51 986 in respect of European patent application No. 81 305 266.9 was announced on 29 May 1985 (cf. Bulletin 85/22).

II. A notice of opposition was filed on 27 February 1986 requesting revocation of the patent on the grounds that its subject-matter lacked novelty and did not involve an inventive step. The opposition was supported by several documents including:

(4) DE-A-2 857 163 (=EP-A-225)

which is relevant to the present decision.

III. By a decision delivered on 20 July 1988 the Opposition Division maintained the patent in amended form on the basis of six claims, Claim 1 reading as follows:

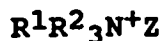
"A granular laundry detergent composition comprising:

(a) from 2% to 30% by weight of composition of a surfactant system comprising:

(i) anionic surfactant,

(ii) alkoxyated nonionic surfactant, said alkoxyated nonionic surfactant comprising an ethoxyated nonionic surfactant having the general formula $RO(CH_2CH_2O)_nH$ wherein R is a primary or secondary branched or unbranched C₉-C₁₅ alkyl or alkenyl and n, the average degree of ethoxylation, is from 2 to 10, and

- (iii) from 0.2% to 2% by weight of composition of water-soluble mono C₁₀-C₁₄ alkyl, alkenyl or alkaryl quaternary ammonium cationic surfactant having a critical micelle concentration of at least 200 ppm at 30°C said water-soluble cationic surfactant comprising at least a quaternary ammonium compound having the general formula:



wherein R¹ is C₁₀-₁₄ alkyl, R² is methyl, and Z is an anion in number to give electrical neutrality and wherein the weight ratio of alkoxylated nonionic surfactant : water-soluble cationic surfactant is in the range of from 20:1 to 1:1; and

- (b) at least 10% by weight of composition of detergency builder, characterised in that the weight ratio of anionic surfactant : water-soluble cationic surfactant is from 5.1:1 to 50:1 and the weight ratio of anionic surfactant : alkoxylated nonionic surfactant is from 5.9:1 to 1:3".

The Opposition Division held that the subject-matter of this claim was novel and that it differed from the compositions disclosed in citation (4) only insofar as the ratio of the anionic surfactant to the cationic surfactant was 5.1:1 and more instead of 5:1 or less. It was also held that its subject-matter involved the required inventive step because none of the cited documents, alone or in combination, would lead the skilled person to foresee the advantages obtained by the subject composition, i.e. that the excellent grease and oil removal performance can be secured simultaneously with

good clay soil detergency and whiteness maintenance under realistic multi-cycle wash-wear conditions.

- IV. A notice of appeal was filed against this decision on 12 September 1988 and the appeal fee was paid on the same date.

A statement of grounds of appeal was submitted on 19 November 1988.

- V. The Appellant maintained his novelty objection based on the disclosure in citation (4) that a coconut alkyl quaternary ammonium cationic surfactant could be used and on theoretical calculations, excluding C₈ and C₁₆-C₁₈ groups from coconut alkyl, which would raise the upper limit of the anionic to cationic surfactant ratio disclosed in citation (4) of 5:1 to a value of about 6.25:1, i.e. to a value within the scope of present Claim 1. Moreover, he disputed that the subject-matter of the claims involved an inventive step because his test reports submitted on 19 November 1988 and on 23 November 1989 showed that using anionic to cationic surfactant ratios within the claimed range of 5.1:1 to 50:1 the alleged advantages could not be achieved.

- VI. In his counter-statement, the Respondent contested the Appellant's pleading. In connection with novelty it was alleged that there was no disclosure in citation (4) of a composition which simultaneously met all the level and ratio requirements specified in present Claim 1. Moreover, Appellant's construed novelty objection could not be accepted because it was based on arbitrarily selected composition parameters to meet his particular purpose ignoring disclosure of a more general or contrary character. Regarding inventive step it was argued that the combination of features set out in Claim 1, in particular

the low level of cationic surfactant and the higher ratio of anionic to cationic surfactant, would be critical for achieving the advantages of the subject compositions.

- VII. Oral proceedings took place before the Board on 8 January 1991. The Appellant, who was properly summoned, did not attend.

At this hearing the Respondent elucidated that the claimed compositions would substantially solve the problem of whiteness maintenance after a number of washing cycles avoiding the redeposition of clay soil. In this connection he pointed out that the test reports submitted by the Appellant in order to contest the alleged advantages could not be accepted, because these tests only concern one washing cycle instead of a number of cycles and because the washing conditions would not be realistic, in particular due to the short washing time.

The Board expressed the opinion that the claimed composition lacked novelty because citation (4) disclosed all the features of present Claim 1. Moreover, it was indicated that, even if this objection could be overcome by restricting Claim 1 (for instance to the preferred ratio limit of 6:1), the Board was unable to acknowledge an inventive step without evidence showing a substantial improvement in washing performance obtained by such a restriction. This evidence was regarded as necessary because, on the one hand, the claimed compositions would be closely related to the known compositions of citation (4), the whiteness maintenance problem in relation to the anionic to cationic surfactant ratio being mentioned in this prior art document (cf. page 4, first paragraph), and because, on the other hand, the submitted test reports, while not quite convincing, provided at least an

indication that the alleged advantages may not be achieved over the claimed range.

However, the Respondent relinquished the opportunity given by the Board to restrict the claim and to provide the required evidence.

VIII. The Appellant's request that the decision under appeal be set aside and that the patent be revoked remained unchanged.

The Respondent requested that the appeal be dismissed.

IX. At the conclusion of the oral proceedings, the Board's decision to revoke the patent was announced.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. In view of the outcome of these proceedings the question of the formal admissibility of the amended version of claims need not be answered.
3. In connection with the novelty objections indicated above (paragraph VII), it is pointed out that citation (4) discloses a laundry detergent composition comprising in its granular form about 4% to 30% by weight of composition of a surfactant system comprising an anionic surfactant, an alkoxyated nonionic surfactant and a water-soluble cationic surfactant (cf. page 3, lines 6-13). Preferred nonionic surfactants are ethoxyated nonionic surfactants which correspond essentially with the presently claimed component (ii) (cf. page 6, lines 28-33) and preferred cationic surfactants are quaternary ammonium compounds.

which correspond essentially with the presently claimed component (iii) (cf. page 7, lines 10 to 13 and line 27 to page 8, line 11). These cationic surfactants are used in an amount of preferably at least 5% by weight based on the surfactant system (cf. page 4, lines 2-5 from the bottom and page 5, lines 6-9), i.e. at least 0.2% by weight, preferably at least 0.3% by weight, based on the total composition because the surfactant system constitutes 4 to 30% by weight, preferably 6-15% by weight of the total composition (cf. page 3, lines 10-13). These figures fall within the range claimed for component (iii). Furthermore, citation (4) discloses that the weight ratio nonionic to cationic surfactant is in particular about 20:1 to about 1:1 (cf. page 4, lines 29-32), the weight ratio anionic to cationic surfactant is at most about 5:1 (cf. page 4, lines 26-28) and the weight ratio anionic to nonionic surfactant is about 7:1 to about 1:20. The disclosed ratio nonionic to cationic surfactant is identical with the ratio claimed under (iii), whereas the ratio anionic to nonionic surfactant essentially comprises the ratio of 5,9:1 to 1:3 claimed under (b). Moreover, citation (4) indicates that the compositions comprise at least 10% by weight, based on the total composition of a detergency builder (cf. page 3, line 5). This disclosed amount of the detergency builder is identical with the amount claimed under (b).

3.1 The Opposition Division held that the compositions according to present Claim 1 would only differ from the known compositions disclosed in citation (4) insofar as the ratio anionic to cationic surfactant is within the range of 5.1:1 to 50:1 instead of 5:1 or less, referring in particular to the examples 5, 7, 9, 10 and 11 of this citation.

On the other hand, the Appellant contested the novelty by denying the existence of this difference.

- 3.2 In the Board's judgment, Appellant's novelty objection which is based on the disclosure of coconut alkyl benzyl dimethyl ammonium chloride as a suitable cationic surfactant (cf. page 29, lines 8-9; and page 32, lines 1-2) and on theoretical calculations excluding C₈ and C₁₆₋₁₈ alkyl groups from coconut alkyl, which would raise the known upper limit of 5:1 to a value within the scope of present Claim 1, cannot be accepted because this particular ammonium compound does not comply with component (iii) of present Claim 1 requiring a C₁₀-C₁₄ alkyl trimethyl ammonium compound.
- 3.3 However, the Board also cannot concur with the view of the Opposition Division that the compositions according to present Claim 1 would differ from the known compositions with respect to the weight ratio anionic to cationic surfactant because citation (4) discloses that the weight ratio anionic to cationic surfactant lies within the range of about 1:3 to about 5:1 (cf. page 4, lines 27-29) and because the disclosed upper limit of about 5:1 includes, in the Board's judgment, the claimed lower limit of 5.1:1. Therefore, the Board concludes that all of the claimed composition parameters, i.e. the components, their amounts and their weight ratios form part of the technical teaching in citation (4).
- 3.4 In view of the argumentation of the Respondent with respect to the novelty of the claimed subject-matter set out in paragraph VI above, it is emphasised that, in accordance with the established jurisprudence of the Boards of Appeal in deciding the question of novelty of an invention, consideration has not only to be given to the examples but also to whether the disclosure of a prior art

document as a whole is such as to make available to the skilled person as a technical teaching the subject-matter for which protection is sought (cf. Decisions T 124/87 "Dupont/Copolymer", OJ EPO 1989, 491, paragraph 3.2; T 12/81 "Diastereoisomers", OJ EPO 1982, 296, paragraph 5; and T 198/84 "Thiochloroformates", OJ EPO 1985, 209, paragraph 4).

- 3.5 The Respondent's view that his alleged invention is in particular characterised by a low level of the cationic surfactant and by a high weight ratio anionic to cationic surfactant, must likewise fail.

Citation (4) describes in 7 of 11 examples, namely in examples 4, 5, 6, 7, 9, 10 and 11, compositions containing 2% by weight or less of a cationic surfactant. Therefore, in the Board's judgment, the claimed low level of cationic surfactant is disclosed in citation (4) in such a way that the skilled person would consider it even as a preferred feature of the known compositions. The allegedly relatively high level of the weight ratio anionic to cationic surfactant cannot be considered as a distinguishing feature as long as the overlap between the lower end of the claimed ratio and the upper end of the known ratio exists, as it has been set out in paragraph 3.3 above.

- 3.7 Therefore, in the Board's judgment, the disclosure of citation (4) as a whole makes available to the skilled person a laundry detergent composition falling within the scope of present Claim 1. Consequently this claim lacks novelty.


4. The dependent Claims 2 to 6 fall with Claim 1.

Order

For these reasons, it is decided that:

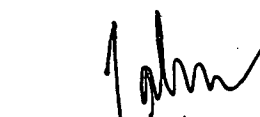
1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:



E. Görgmaier

The Chairman:



K.J.A. Jahn