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**Datasheet for the decision  
of 20 December 2006**

**Case Number:** T 0475/02 - 3.3.07

**Application Number:** 95100251.8

**Publication Number:** 0665324

**IPC:** D06M 16/00

**Language of the proceedings:** EN

**Title of invention:**

Compositions that introduce variations in color density into dyed cellulosic fabrics

**Patent proprietors:**

GENENCOR INTERNATIONAL, INC.

**Opponents:**

NOVOZYMES A/S

**Headword:**

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**Relevant legal provisions:**

EPC Art. 54, 56, 84, 100(b), 100(c), 123(2)

EPC R. 57a

**Keyword:**

"Opposition grounds - extension of subject-matter - (yes) - (Main Request, Auxiliary Requests I to IV)"

"Amendments - added subject-matter - (no) - (Auxiliary Request V)"

"Opposition grounds - insufficiency of disclosure - extension of the ground of opposition to claim 1 - consent by the patent proprietors (no)"

"Novelty - (yes) - (Auxiliary Request) V"

"Inventive step - obvious solution - (yes) - (Auxiliary Request V)"

"Late filed request (yes) - admissible - (no) - (Auxiliary Request VI)"

**Decisions cited:**

G 0009/91, T 0844/92

**Catchword:**

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Case Number: T 0475/02 - 3.3.07

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.07  
of 20 December 2006

**Appellants:** NOVOZYMES A/S  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted on 5 March 2002  
rejecting the opposition filed against European  
patent No. 0665324 pursuant to Article 102(2)  
EPC.

**Composition of the Board:**

**Chairman:** S. Perryman  
**Members:** G. Santavicca  
B. ter Laan

## Summary of Facts and Submissions

- I. The appeal is against a decision of the Opposition Division to reject the opposition against European patent 0 665 324, which was granted on divisional application 95100251.8.
- II. The divisional application, which was filed in respect of subject-matter of earlier application 88110929.2 (EP-A-0 307 564) filed on 8 July 1988 and claiming a priority date of 15 September 1987, comprised 12 claims. Independent claims 1, 3 and 6 read as follows:

"1. An aqueous composition that can be used to introduce into the surface of cellulose fabrics, localized areas of variation and color density which aqueous composition consists essentially of:

- (a) a major proportion of water;
- (b) at least about 20,000 international units of a cellulase enzyme composition per pound of fabric; and
- (c) about 0 to 1,000 parts of an enzyme compatible surfactant per one million parts of aqueous composition."

"3. The composition of claim 1 wherein the surfactant is a nonionic surfactant, and is present at a concentration of 5 to 800 parts of surfactant per one million parts of aqueous composition."

"6. A solid concentrate composition that can be used in aqueous solution to form, in the surface of dyed cellulosic fabrics, localized areas of variations in

color density through the removal of dye, which composition consists essentially of:

- (a) about 25 to 40 wt-% of a cellulase enzyme composition;
- (b) about 1 to 50 wt-% of an electrolyte; and
- (c) about 20 to 60 wt-% of a builder or buffer salt."

III. The patent as granted comprised 12 claims. Claims 1, 3 and 6 as granted read as follows:

"1. An aqueous composition that can be used to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional pumice stone processing, which aqueous composition consists essentially of:

- (a) a major proportion of water;
- (b) at least 2,500 CMC units of a cellulase enzyme composition per liter of aqueous composition; and a non-zero amount of up to 1,000 parts of an enzyme compatible surfactant per one million parts of aqueous composition."

"3. The composition of claim 1 wherein the surfactant is a nonionic surfactant, and is present at a concentration of 5 to 800 parts of surfactant per one million parts of aqueous composition."

"6. A solid concentrate composition for the preparation of an aqueous treatment composition, which aqueous composition is used to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional

pumice stone processing, which composition consists essentially of:

- (a) above 25 to 40 wt-% of a cellulase enzyme composition;
- (b) 1 to 50wt-% of an electrolyte; and
- (c) 20 to 60 wt-% of a builder or buffer salt."

IV. The patent had originally been opposed on the grounds: that its subject-matter extended beyond the content of the divisional application as filed or of the earlier application as filed (Article 100(c) EPC); that it did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC); and that the claimed subject-matter lacked novelty and an inventive step (Article 100(a) EPC) having regard to the following documents:

- D1: Folkebladet of January 19, 1988;
- D1a: English translation of D1;
- D2: EP-A-0 220 016;
- D3: US-A-4 435 307;
- D4: US-A-4 443 355;
- D5: US-A-4 661 289;
- D6: WO-A-89/04862;
- D7: GB-A-2 094 826;
- D8: GB-A-2 095 275;
- D9: Celluclast Product Sheets of NOVO.

V. In the decision under appeal, the opposition against the patent was rejected on the basis of reasoning which can be summarised as follows:

- (a) Claims 1 and 3 fulfilled the requirements of Article 123(2) EPC and there was no reason to

doubt that the patent in suit was also duly based on the earlier application as filed.

- (b) The subject-matter of Claim 6 was disclosed in the patent in suit in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.
- (c) As regards novelty, the subject-matter of Claim 1 enjoyed the priority date of the patent in suit whereas that of Claim 6 did not. The only document cited against Claim 1 was D1, which however had been published after the priority date of the patent in suit and thus was not prior art against Claim 1. Hence, the subject-matter of Claim 1 was novel. The novelty of the subject-matter of Claim 6 over D1 was not contested. As regards the other documents, neither D4 nor any of D5 and D6 disclosed a solid concentrate composition consisting of above 25 to 40% of a cellulase. Furthermore, D6 did not disclose a concentration of calcium carbonate in the range of 1 to 50 wt% of the composition. These documents were thus not novelty destroying.
- (d) As to inventive step, no document disclosed an aqueous composition with 2500 CMC units of cellulase enzyme. The production of a distressed appearance on cellulosic fabrics by a chemical process, apart from D1 which was not prior art against Claim 1, had not been disclosed in the prior art represented by any of D2, D3 and D5. As regards Claim 6, which concerned a concentrate composition containing active enzyme, it could not

be seen why the skilled person starting from any of D4, D5 or D6 would arrive at a distinct concentrate as claimed in the patent in suit. Therefore, the compositions of Claims 1 and 6 were also non-obvious.

(e) In summary, the grounds of opposition did not prejudice maintenance of the patent as granted and the opposition was rejected.

VI. The opponents lodged an appeal against that decision and paid the appeal fee. In their statement setting out the grounds of appeal, the appellants maintained all of the invoked grounds of opposition. Then, in preparation for the oral proceedings, they enclosed a résumé of Dr Lars Anderson as well as further documents for consideration by the Board, as follows:

D10: EP-B-0 307 564 (earlier patent);

D11: Letter from Genencor's representative dated 21 November 1996 (in the opposition proceedings against the earlier patent);

D12: Letter from Genencor's representative dated 28 August 1998 (in the opposition proceedings against the earlier patent);

D13: Letter from Genencor's representative dated 25 February 1999 (in the opposition appeal proceedings against the earlier patent);



- D14: Shoemaker & Brown, "*Characterization of Endo-1,4- $\beta$ -D-Glucanases purified from Trichoderma Viride*", *Biochimica et Biophysica Acta*, 528 (1978) 147-161;
- D15: Eriksson & Hollmark, "*Kinetic Studies of the Action of Cellulase upon Sodium Carboxymethyl Cellulose*", in *Archives of Biochemistry and Biophysics*, 133, 233-237 (1969);
- D16: Declaration of Niels Lange dated 17 November 2006;
- D17: Castanon & Wilke, "*Effects of the Surfactant Tween 80 on Enzymatic Hydrolysis of Newspaper*", *Biotechnology and Bioengineering*, Vol. XXIII, 1365-1372 (1981);
- D18: Statement by Dennis McEwan dated 27 August 1998 (D7 in Genencor's opposition against the earlier patent).

VII. In their response to the statement setting out the grounds of appeal, the patent proprietors (respondents) argued against the arguments of the appellants and enclosed an amended set of claims as Auxiliary Request (letter dated 24 March 2003). Then, in preparation for oral proceedings, the respondents enclosed further four sets of amended claims as Auxiliary Requests II to V (Letter dated 20 November 2006). Amended claims 1, 3 and 6 of the Auxiliary Request and of Auxiliary Requests II to V read as follows, respectively:

*Auxiliary Request*

"1. An aqueous composition that can be used to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional pumice stone processing, which aqueous composition consists essentially of:

- (a) a major proportion of water;
- (b) at least 2,500 CMC units of a cellulase [sic] enzyme composition per liter of aqueous composition; and 10 to 900 parts of an enzyme compatible surfactant per one million parts of aqueous composition."

"3. The composition of claim 1 wherein the surfactant is a nonionic surfactant, and is present at a concentration of 15 to 750 parts of surfactant per one million parts of aqueous composition."

Claim 6 is identical to Claim 6 as granted.

*Auxiliary Request II*

"1. An aqueous composition that can be used to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional pumice stone processing, which aqueous composition consists essentially of:

- (a) a major proportion of water;
- (b) 2.500 CMC units to 30.000 CMC units of a cellulase enzyme composition per liter of aqueous composition; and 10 to 900 parts of an enzyme compatible surfactant per one million parts of aqueous composition."

"3. The composition of claim 1 wherein the surfactant is a nonionic surfactant, and is present at a concentration of 15 to 750 parts of surfactant per one million parts of aqueous composition and wherein the cellulase enzyme composition is present with 6.000-20.000 CMC units per liter of aqueous composition."

Claim 6 is identical to Claim 6 as granted.

*Auxiliary Request III*

Claims 1 and 3 are identical to Claims 1 and 3 according to Auxiliary Request II.

"6. A solid concentrate composition for the preparation of an aqueous treatment composition, which aqueous composition is used to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional pumice stone processing, which composition consists essentially of:

- (a) above 25 to 40 wt-% of a cellulase enzyme composition **having 1.000 to 6.000 CMC units per gram of product** (emphasis added by the Board);
- (b) 1 to 50 wt-% of an electrolyte; and
- (c) 20 to 60 wt-% of a builder or buffer salt."

*Auxiliary Request IV*

Claims 1 and 3 are identical to Claims 1 and 3 according to Auxiliary Request II.

"6. A solid concentrate composition for the preparation of an aqueous treatment composition, which aqueous composition is used to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional pumice stone processing, which composition consists essentially of:

- (a) above 25 to 40 wt-% of a cellulase enzyme composition; **wherein the cellulase used is a fungal cellulase and the builder salt is a phosphate salt and wherein the cellulase is present in the concentrate at a concentration of greater than 20,000 units per kg of concentrate and the phosphate salt comprises an alkali metal salt of an orthophosphate, a pyrophosphate, a tripolyphosphate, a metaphosphate, or mixtures thereof** (emphasis added by the Board),
- (b) 1 to 50 wt-% of an electrolyte; and
- (c) 20 to 60 wt-% of a builder or buffer salt."

*Auxiliary Request V*

Claims 1 and 3 are identical to Claims 1 and 3 according to Auxiliary Request II. Claim 6 and its dependent claims have been deleted.

- VIII. In a communication in preparation for oral proceedings, the Board pointed out that since the appeal concerned the rejection of an opposition, the relevant questions concerning whether the text as granted or as proposed for maintenance in modified form was allowable, were to be decided by reference to Article 100(c) EPC.

IX. Oral proceedings were held on 20 December 2006. After a discussion of the subject-matter claimed in the Main Request, in the Auxiliary Request and in Auxiliary Requests II to V, the respondents submitted Auxiliary Request VI. The sole Claim of that request read as follows:

*Auxiliary Request VI*

"1. Use of an aqueous composition to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional pumice stone processing, which aqueous composition consists essentially of:  
(a) a major proportion of water;  
(b) 2,500 to 30.000 CMC units of a cellulase enzyme composition per liter of aqueous composition; and 10 to 900 parts of an enzyme compatible surfactant per one million parts of aqueous composition."

X. The arguments of the appellants that are relevant to the present case can be summarised as follows:

*Main request (Claims as granted)*

*Opposition grounds-extension of subject-matter*

Although the description in the divisional application as filed was identical to that of the earlier application, its claims were different, so that the two applications were materially different. Hence, the amendments to the claims carried out during the examination proceedings should have been based on both

the divisional and the earlier applications. Such was not the case and a number of objections against the claims of the patent granted on the divisional application arose, *inter alia* as follows:

*Claim 6*

Claim 6 as granted had no basis in the divisional application as filed nor in the earlier application. The feature "above 25 to 40 wt-% of a cellulase enzyme composition" in Claim 6 as granted had no basis in the feature "about 25 to 40 wt-% of a cellulase enzyme composition" in Claim 6 as filed, in which the latter feature was related to a different "limitation to being suitable for a particular purpose" (herein after, "limitation by purpose") than that in Claim 6 as granted. In particular, the term as filed "about 25" had a different meaning than that of the term as granted "above 25". The term as filed encompassed all of the values about 25, i.e. lower than, equal to or greater than 25, whereas all of the values lower than and equal to 25 were now excluded, without there being any basis in the application as filed for that deletion or for its implications. Hence, the ground of opposition under Article 100(c) EPC invoked against Claim 6 as granted prejudiced the maintenance of the patent as granted.

*Auxiliary Request and Auxiliary Requests II to IV*

Since Claim 6 according to each of Auxiliary Request and Auxiliary Requests II to IV contained the feature "above 25 to 40 wt-% of a cellulase enzyme composition", as defined in Claim 6 as granted (Main Request), the

conclusion drawn for the Main Request similarly applied to each of Auxiliary Request and Auxiliary Requests II to IV.

*Auxiliary Request V*

*Amendments*

*Claim 1*

Claim 1 according to Auxiliary Request V contained added subject-matter, for the following reasons:

- (a) The "limitation by purpose" features, which merely defined a suitability for a particular use of the composition of Claim 1 but were nevertheless considered by the respondents as a distinction over the prior art, had no basis in the application as filed. In particular, Claim 1 as filed concerned a composition which could be suitable for a different purpose.
  
- (b) The ranges of the concentrations for enzyme and surfactant defined in Claim 1 could not be based on Table 1 of the divisional application as filed nor on Claim 1 as filed. Table 1 was headed "aqueous treating compositions" and thus referred to any aqueous treating compositions, whereas Claim 1 only referred to those specific compositions used for introducing local variations of dyes in given amounts of unsewn fabric or new garment to obtain a distressed appearance. Thus, Table 1 concerned a different technical teaching than Claim 1 as filed, which fact was admitted by the respondents during

the examination proceedings. Further, Table 1 listed a precise number of ingredients and could only support compositions containing those ingredients. Instead, the composition of Claim 1, despite the expression "consisting essentially of", could include further ingredients, as was also apparent from the wording of Claims 6 and 9 as granted, where the same expression was used. Furthermore, in Table 1 the term "surfactant" was generic, whereas in Claim 1 the surfactant should be "enzyme compatible" and the description of the divisional application made clear that not all of the surfactants were enzyme compatible.

- (c) The enzyme activity defined in Claim 1, expressed in terms of units per litre of composition, had no basis in the application as filed. In fact, in Claim 1 as filed the activity was expressed in terms of international units per pound of fabric.
- (d) The lack of basis for Claim 1 was essentially due to the fact that the definition of Claim 1 of the earlier application as filed, which could have supported the present definition, was no longer present in the divisional application as filed.

### Claim 3

The objections raised against Claim 1 that the ranges of the concentrations for enzyme and surfactant were not based on Table 1 as filed, applied *mutatis mutandis* to the ranges of the concentrations for enzyme and surfactant as defined in Claim 3 of Auxiliary Request V.



*Insufficiency of disclosure*

During the oral proceedings, the appellants sought to extend the ground of insufficiency of disclosure initially argued against Claim 6 as granted, no longer present, against the subject-matter of Claim 1 of Auxiliary Request V, on the basis of arguments put forward in the opposition proceedings against the parent patent.

*Novelty*

The appellants no longer voiced any argument on novelty after the respondents had confirmed during the oral proceedings that commercially available enzyme preparations were used to formulate the claimed compositions, whose activity was expressed in terms of international units. Hence, the CMC units in Claim 1 in suit were international units, in line with IUPAC International Standard published in 1987 (*infra*) which was common general knowledge, and consistent with the view expressed in the previous decision on the earlier patent's case T 844/92 (not published in the OJ EPO).

*Inventive step*

*Closest prior art*

Since Claim 1 concerned a composition of matter per se, the "limitation by purpose" defined in Claim 1 only required the composition to be suitable for the purpose stated in the claim. Hence, any known composition that contained the essential ingredients represented a suitable starting point. D2 not only related to the

same technical field as the patent in suit (treatment of dyed cellulosic fabrics) but also disclosed the most technical feature in common with Claim 1, in particular an amount of cellulase as high as up to 10000 units and the possibility of adding a surfactant. Thus, D2 represented the best starting point.

### *Problem and Solution*

The application as filed concerned enzyme compositions that did not necessarily contain a surfactant. In fact, the exemplified compositions did not contain any surfactants. Since there was no evidence in the application as filed that the presence of a surfactant was critical, and since that criticality had never been shown by comparative tests, no particular effect could be linked to the presence of a surfactant beyond its expected function. Thus, the problem to be solved was to provide a further composition to those exemplified in D2. The problem formulated by the respondents was not appropriate, because it related to the use of the composition which use was not the subject of the claim.

### *Obviousness*

D2 explicitly mentioned that surfactants were possible additives of its enzyme compositions. That a surfactant improved the wettability of a fabric was generally known. Also, it was known from D17 that some surfactants were compatible (i.e. could be used together) with enzyme compositions and indeed increased their cellulolytic activity, e.g. with an addition of 0.1% of nonionic surfactant. The fact that D17 concerned the treatment of newspapers was not relevant,

because Claim 1 in suit concerned a composition of matter which degraded the cellulose and the composition of D17 did the same, in exactly the same way, using the same enzymes. Thus, the mention of a surfactant in D2 and/or the incitation to use a surfactant in an enzyme composition in D17 would have led the skilled person toward a composition as claimed, which consequently was obvious and did not involve an inventive step. There was no doubt that such a composition would also be suitable for attaining a stone washed appearance on denim fabrics, if so used.

For those reasons, the patent in suit should not be maintained in the amended form of Auxiliary Request V.

#### *Auxiliary Request VI*

Auxiliary Request VI was filed at a very late stage of the oral proceedings before the Board. It had a scope which was substantially identical to that of Claim 1 of the earlier patent granted on an earlier application out of which the application on which the present patent had been granted had been divided out. The implications, such as invalidity on the ground of double patenting, could not be assessed quickly. Since Claim 1 concerned a use of a composition but did not define any use steps, objections were likely also to arise against the amendment under Article 123(2) EPC. Further, since Claim 1 contained functional definitions having a relative meaning, also objections under Articles 83, 84 and 56 EPC arose. In particular, the "limitation by purpose" features, which were non limiting for Claim 1 concerning a composition of matter, now restricted the use, and this required a deeper analysis. Despite the

legal uncertainty which was caused by the late filing of Auxiliary Request VI, the case, if the request was admitted, should however be considered by the Board, provided that also the further items of evidence D10 to D18 submitted by the appellants be taken into account.

XI. The arguments of the respondents that are relevant to the present decision can be summarised as follows:

*Main Request*

*Opposition grounds - extension of subject-matter*

*Claim 6*

The term "about 25 wt-%" for the lower limit of the cellulase enzyme composition defined in Claim 6 as filed stood for a lower limit of precisely 25 wt-% or slightly above or below this precise value, and hence also disclosed a lower limit above 25 wt-%. The term in Claim 6 as granted "above 25 wt-%" only cut out the limit value being lower than 25 wt-% or being 25 wt-% exactly, thus leaving the initially disclosed lower limit value above 25 wt-%. Therefore, the amendment was an allowable restriction.

*Auxiliary Request and Auxiliary Requests II to IV*

*Claim 6*

Claim 6 according to each of the Auxiliary Request and Auxiliary Requests II to IV, which contained the feature "above 25 to 40 wt-% of a cellulase enzyme composition" as did Claim 6 of the Main Request, was allowable for

the same reasons given in support of Claim 6 as granted (Main Request).

*Auxiliary Request V*

*Amendments*

*Claim 1*

Claim 1 of Auxiliary Request V was identical to Claim 1 of Auxiliary Request II. The feature concerning a limitation by purpose in Claim 1 according to Auxiliary Request V was also present in Claim 1 as granted. That limitation by purpose was based on the entire disclosure of the divisional application as filed, in particular on the disclosure that a "distressed appearance" was indistinguishable from a "stone washed appearance", and that a "stone washed appearance" was due to local variations of colour on dyed cellulosic fabrics, clothing items and garments.

Claim 1 as filed in conjunction with Table 1 as filed, if read within the context of the entire disclosure of the divisional application as filed, formed a basis for the ranges of the concentrations for the enzyme and the surfactant defined in Claim 1 according to Auxiliary Request V. Since the expression "consisting essentially of" was already present in Claim 1 as filed, this expression did not involve an amendment whose compliance with Article 84 EPC would be open for consideration.

As regards the meaning of the CMC units defined in Claim 1, they were international units. This was

apparent from the divisional application as filed, if read by a skilled person using common general knowledge. At the oral proceedings before the Board the respondents mentioned that the common general knowledge included the standard definition and procedure for the measurement of cellulase activities described in a standard issued by the International Union of Pure and Applied Chemistry (IUPAC) in 1987 ("Measurements of Cellulase Activities" by T.K. Ghose, in Pure & Appl. Chem., Vol. 59, No. 2, pp. 257-268, 1987). That the CMC units were international units had also been acknowledged in the decision concerning the earlier application's case T 844/92 (not published in the OJ EPO).

### *Claim 3*

The arguments in support of the amendments to the ranges of the concentrations for the enzyme and the surfactant in Claim 1 applied *mutatis mutandis* to Claim 3, since the more limited ranges for the concentrations of the enzyme and the surfactant defined in the latter were also based on Table 1 of the divisional application as filed.

### *Insufficiency of disclosure*

The respondents did not consent to the extension to Claim 1 of the ground of opposition invoked under Article 100(b) EPC only against Claim 6 as granted.

*Novelty*

That the subject-matter of Claim 1 was novel over the cited documents was no longer disputed by the appellants during the oral proceedings before the Board.

*Inventive step*

*Closest prior art*

It was agreed that while the composition defined in Claim 1 needed to be suitable for the purpose as defined it could also be useful for other purposes. Nevertheless, the problem-solution approach should be applied as usual, taking into account similarity of purpose and effect, and whether the technical fields were closely related. Since D2 concerned a clarification agent to renew the colour of an old, dyed cellulosic fabric without whitening, i.e. contrary to what was done in the patent in suit, D2 could not represent the closest prior art for the claimed subject-matter. This had been acknowledged in the decision under appeal. Hence, the closest prior art was the stone washing technology discussed in the patent in suit.

*Problem and Solution*

The problem to be solved was to provide a chemical composition that avoided the necessity of using pumice stones, and yet produced a stone wash look. Since the presence of the surfactant enhanced the overall activity of the enzyme, the problem having regard to D2

was to provide an alternative composition having enhanced activity.

*Non-obviousness*

D2 suggested that almost anything could be added to the exemplified compositions, not only a surfactant. The effect of the surfactant on the enzyme composition was not shown in D2. Although D17 showed the advantages of using enzymes and surfactants, that suggestion concerned the treatment of newspapers and hence a different problem. Thus, D17 would not have been combined with D2. Further, the amount of surfactant mentioned in D17 was higher than that defined in present Claim 1. However, even starting from D2 and seeking to combine it with D17, there was no pointer in that prior art that would have led the skilled person towards a composition as claimed.

*Auxiliary Request VI*

Auxiliary Request VI had been submitted only at the oral proceedings because there had been confidence in the allowability of at least Auxiliary Request V.

Auxiliary Request VI consisted of only one use claim, which was similar to method Claim 1 of the parent patent, albeit with differences relating to the limits of enzymes and surfactants as well as to the absence of some steps, such as agitation. Hence, no double patenting could be objected to.

Since it was allowable to revert from a product claim to the use thereof for a particular effect without



contravening Article 123(3) EPC, Auxiliary Request VI was allowable and should be considered by the Board, without remittal of the case.

The claimed use was novel and not obvious over the prior art.

XII. The appellants (opponents) requested that the decision under appeal be set aside and that the European patent be revoked.

XIII. The respondents (patent proprietors) requested that the appeal be dismissed (Main Request) or, alternatively, that the patent be maintained on the basis of any one of the auxiliary requests filed on 24 March 2003 (Auxiliary Request), 20 November 2006 (Auxiliary Requests II to V) and during the oral proceedings (Auxiliary Request VI).

## **Reasons for the Decision**

1. The appeal is admissible.

### *Main request*

2. *Opposition grounds-extension of subject-matter*

2.1 Article 100(c) EPC, one of the grounds of opposition invoked by the opponents, lays down that there are grounds for objection if "the subject-matter of the European patent extends beyond the content of the application as filed, or, if the patent was granted on a divisional application or on a new application filed

in accordance with Article 61, beyond the content of the earlier application as filed."

Since the opposed patent was granted on a divisional application, for the subject-matter of any claim as granted to be allowable, it has thus to pass both of the two tests:

- (a) it must not extend beyond the content of the divisional application as filed; and,
- (b) it must not extend beyond the content of the earlier application as filed.

Whether test (a) is passed depends only on the particular claim and on the content of the divisional application as filed. That the subject-matter of a claim passes test (b) does not necessarily mean that it passes test (a), and vice-versa. The two tests need separate consideration, in particular where the divisional application as filed did not include the complete text (both description and claims) of the parent application.

In the present case, the divisional application includes the text of the description of the earlier application as filed but not all of its claims as filed.

## 2.2 *Claim 6*

- 2.2.1 Compared to Claim 6 of the divisional application as filed, Claim 6 as granted contains the following amendment: "(a) above 25 to 40 wt-% of a cellulase enzyme composition".

2.2.2 The range appearing in the claim as filed "about 25 wt-% to 40" includes the exact value of 25 wt-% as well as values slightly below and above 25 wt-%. According to the respondents, the term in the claim as granted "above 25 wt-%" excluded the values smaller than 25 wt-% and the exact value of 25 wt-%. It did not however exclude any values above the exact value of 25 wt-%. Hence, the amendment is such that the exact value of 25 wt-% has now become a critical limit for the invention in the sense that prior art referring to a value of 25 wt-% can be distinguished. The wording of Claim 1 as filed "about 25 to 40 wt-%" provides no basis for treating 25 wt-% as a critical limit, let alone for excluding the value of 25 wt-%. The original wording means that the precise lower value is not important. This cannot be treated as a basis for saying that the precise lower value is of critical importance.

2.2.3 According to the application as filed, the useful concentrate compositions should contain at least 1 to 90 wt-% of cellulase enzyme, preferably 2 to 80 wt-%, most preferably 5 to 75 wt-% (Table 2). The useful inorganic solid concentrate should contain 25 to 90 wt-%, preferably 30 to 85 wt-%, most preferably 35 to 80 wt-% (Table 3). The same ranges are disclosed for the useful, the preferable and the most preferable organic solid concentrate, of course with different ingredients than those of the inorganic concentrate. Hence, it is not apparent from the description of the divisional application as filed that the exact value of 25 wt-% is a critical limit for the solid concentrate composition defined in Claim 6 as granted, which, in its definition,

is restricted neither to inorganic nor to organic solid concentrates.

2.2.4 Therefore, the Board concludes that the amended range "above 25 to 40 wt-%" for the cellulase enzyme composition, which is present in Claim 6 according to the Main Request, and in the various further versions of Claim 6 put forward, has no basis in the divisional application as filed.

2.2.5 The respondents have not even argued that the term "above 25 wt-%" represents a disclaimer of the value "25 wt-%" known in the prior art, which disclaimer would fulfil the requirements established in G 1/03 (OJ 2004, 413), and the Board sees no case for treating the amended wording as such a disclaimer.

2.3 It follows from the above that the subject-matter of Claim 6 as granted does not pass test (a) (Point 2.1, *supra*), hence that it does not fulfil the requirements of Article 100(c) EPC and consequently that that ground of opposition prejudices the maintenance of the patent as granted (Main Request).

2.4 In view of this conclusion, it is not necessary for the Board to consider whether the further amendments in Claim 6 as well as those in Claims 1 and 3 of the Main Request fulfil the requirements of Article 100(c) EPC.

*Auxiliary Request and Auxiliary Requests II - IV*

3. *Opposition grounds-extension of subject-matter*

3.1 Claim 6 of each of Auxiliary Request and Auxiliary Requests II to IV contains the feature "(a) above 25 to 40 wt-% of a cellulase enzyme composition", as in Claim 6 of the Main Request.

3.2 The conclusion drawn for Claim 6 of the Main Request in view of the feature "(a) above 25 to 40 wt-% of a cellulase enzyme composition" (Points 2, *supra*) applies *mutatis mutandis* to Claim 6 of each of Auxiliary Request and Auxiliary Requests II to IV.

3.3 Consequently, the ground of opposition under Article 100(c) EPC prejudices the maintenance of the opposed patent also in the amended form according to any of Auxiliary Request and Auxiliary Requests II to IV.

*Auxiliary Request V*

4. *Amendments*

4.1 Auxiliary Request V contains five claims all concerning an aqueous composition (i.e. no claim concerning a solid concentrate). In particular, Claims 1 and 3 contain amendments over Claims 1 and 3 as granted.

4.2 Claims 1 and 3 contain amendments over Claims 1 and 3 as granted which need to comply with Article 123(2) EPC. The ground of opposition under Article 100(c) EPC that has been invoked against Claims 1 and 3 as granted

still applies to the non-amended features of Claims 1 and 3. Therefore, it must be checked whether the subject-matter of Claims 1 and 3 according to Auxiliary Request V is based on the divisional application as filed.

*Claim 1*

4.3 Compared to Claim 1 of the divisional application as filed, Claim 1 according to Auxiliary Request V contains the following amendments:

(a) (Relating to the components of the composition) "(b) 2,500 CMC units to 30.000 CMC units of a cellulase enzyme composition per liter of aqueous composition; and 10 to 900 parts of an enzyme compatible surfactant per one million parts of aqueous composition".

(b) (Relating to a limitation by purpose of the composition)  
"to form, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by conventional pumice stone processing".

4.4 The question thus arises whether for the amendment relating to the components of the composition, Claim 1 according to Auxiliary Request V is based on the disclosure of the aqueous treating compositions given in Table 1 of the divisional application as filed, taken in combination with Claim 1 of the divisional application as filed.

- 4.4.1 The appellants have raised objections against that basis, in particular as summarised on pages 12 and 13 above.
- 4.4.2 As regards the expression "consisting essentially of", of present Claim 1, it was present in Claim 1 of the divisional application as filed, and in Claim 1 as granted as well. Furthermore, dependent Claims 2 to 5 in the present version, like those in the version of the divisional application as filed and in the version as granted, merely define more particularly the ingredients generally defined in Claim 1. Thus, it is not apparent that by the amendment any different protection is sought for further essential ingredients to be added to the composition of present Claim 1.
- 4.4.3 As to the enzyme compatible surfactant, Table 1 generally mentions surfactant but that table appears in the context of the description of enzyme compatible surfactants. Hence, the surfactant generally mentioned in Table 1 must by implication be read as being enzyme compatible.
- 4.4.4 As regards the question whether the "CMC units" defined in present Claim 1 have a basis in the divisional application as filed, in particular in the expression "international units of cellulase enzyme" of Claim 1 of the divisional application as filed, the divisional application as filed discloses that:
- "Cellulase, like many enzyme preparations, is typically produced in an impure state and often is manufactured on a support. The solid cellulase particulate product

is provided with information indicating the number of international enzyme units present per each gram of material. The activity of the solid material is used to formulate the treatment compositions of this invention. Typically the commercial preparations contain from about 1,000 to 6,000 CMC enzyme units per gram of product" (Paragraph bridging pages 9 and 10).

From that paragraph, the Board understands that commercial preparations, i.e. enzyme products prepared elsewhere, are used to formulate the claimed compositions and that the available information based on international enzyme units, also mentioned as CMC enzyme units, is used when formulating the compositions.

The respondents have convincingly shown that standard definition and assay procedures for cellulase enzymes had been described before the priority date of the patent in suit by the International Union of Pure And Applied Chemistry (IUPAC) (*supra*).

Hence, the CMC units defined in Claim 1 according to Auxiliary Request V are standard international enzyme units as described and claimed in the divisional application as filed.

- 4.5 Before addressing the question of the basis for the amendments relating to the limitation by purpose of the claimed composition, the Board notes that also the amended limitation by purpose merely defines a result that can be achieved upon using the aqueous composition of Claim 1, hence that the claimed composition should merely be suitable for the specified purpose.



4.5.1 As regards its basis, the divisional application as filed discloses that:

"The invention relates to pumice-free compositions and processes used in the manufacture of a clothing item, preferably from denim fabric dyed with indigo, that can produce in a clothing item a distressed, "used and abused" appearance that is virtually indistinguishable from the appearance of "stone washed" clothing items made by traditional pumice processing" (Page 1, lines 9-15).

"We have found that the "stone washed" appearance that takes the form of variations in local color density in fabric panels and seams of dyed cellulosic fabric, particularly in denim, clothing items can be substantially obtained using a stone or pumice-free process in which the clothing items are mechanically agitated in a tub with an aqueous composition containing amounts of a cellulase enzyme that can degrade the cellulosic fabric and can release the fabric dye or dyes" (page 4, lines 18 to 25).

"For the purpose of this invention, the terms stone washed appearance and variations in local color depth or density in fabric materials are synonymous. The stone-washed appearance is produced in standard processing in fabric through an abrasion process wherein pumice apparently removes surface bound dye in a relatively small portion of the surface of a garment. Such an abraded area varies from the surrounding color or depth density and is substantially lighter in color. The production of such relatively small local areas of lightness or variation in color depth or density is the

goal of both pumice containing stone washing processes in the prior art and Applicant's stone-free chemical treatment methods and compositions"(page 5, lines 15-27).

4.5.2 It follows from the above that:

- (a) The feature defined in Claim 1 of Auxiliary Request V ("a distressed appearance substantially the same as that produced by conventional pumice stone processing") is equivalent to the feature "localized areas of variation and color density" defined in Claim 1 as filed, and both features have a basis in the divisional application as filed.
- (b) The feature "in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric" is a more specific definition of the feature "cellulose fabric" of Claim 1 as filed, which specific definition is described in the application as filed, in particular in the passages mentioned above.

4.6 Therefore, Claim 1 according to Auxiliary Request V does not contain any subject-matter beyond that of the divisional application as filed (Article 123(2) EPC).

*Claim 3*

4.7 Compared to Claim 3 of the divisional application as filed, Claim 3 according to Auxiliary Request V contains the following amendments:

- (a) "and is present at a concentration of 15 to 750 parts of surfactant per one million parts of aqueous composition";
- (b) "and wherein the cellulase enzyme composition is present with 6.000-20.000 CMC units per liter of aqueous composition".

4.8 These amendments are based on Table 1 of the divisional application as filed, in particular on the description of the most preferred aqueous treating compositions thereof, taken in combination with Claim 3 as filed, on the basis of reasoning as for Claim 1 *supra*.

4.9 Therefore, the amendments to Claims 1 and 3 according to Auxiliary Request V do not add any subject-matter beyond the content of the divisional application as filed. Since they restrict the protection conferred by Claims 1 and 3 as granted, the requirements of Article 123 EPC, paragraphs (2) and (3), are fulfilled.

4.10 The amendments to Claims 1 and 3 in Auxiliary Request V have been carried out to overcome the invoked grounds of opposition under Articles 100(a) and 100(c) EPC. They thus also fulfil the requirements of Rule 57a EPC.

5. *Insufficiency of disclosure*

The respondents did not give their consent to the extension of the ground of opposition under Article 100(b) EPC, originally argued only against Claim 6, to the subject-matter of Claim 1 according to Auxiliary Request V. Hence, the extension of that

ground of opposition has not been discussed, in compliance with G 9/91 (OJ EPO, 1993, 408).

6. *Novelty*

6.1 During the oral proceedings before the Board, the CMC units were interpreted as standard international units, in accordance with the description of the patent in suit and in compliance with the IUPAC standard of 1987 mentioned by the respondents as common general knowledge (*supra*). As a consequence of this interpretation, the appellants have no longer pursued the objection of lack of novelty against the claimed subject-matter of Auxiliary Request V. The Board has no reason to take a different position.

7. *Inventive step*

7.1 The patent in suit concerns compositions that introduce variations in colour density into dyed cellulosic fabrics.

7.2 These compositions are aqueous and include amounts of a cellulase enzyme sufficient to degrade the cellulosic fabric and to release the fabric dye or dyes (Patent in suit, page 3, Paragraph [0009]).

*Closest prior art*

7.3 Aqueous compositions containing similar amounts of cellulase enzyme are known from D2, the compositions being used to clarify old coloured fabrics consisting of cellulosic fibres.

- 7.4 Whilst the appellants regarded D2 as the closest prior art, the respondents argued that the purpose of the compositions described in D2 (clarification of old cellulosic fabrics) was different from the purpose of the compositions defined in the present claims of the patent in suit (stone washed appearance in newly made cellulosic fabrics), such that D2 could not be considered as the closest prior art. Instead, the conventional pumice stone-wash technology acknowledged in the patent in suit was the closest prior art.
- 7.5 The closest prior art according to the problem-solution approach is normally the document having the same purpose or effect as the patent in suit and addressing the same or a similar problem and requiring the minimum of structural or compositional modifications (case Law of the Boards of Appeal of the EPO, 4th edition, 2001, I.D.3.1 to 3.3).
- 7.6 D2 concerns a clarification agent for coloured fabrics, containing or consisting of cellulose based fibres, characterized by the fact that the clarification agent as an active constituent contains a cellulase (Claim 1).

That agent should fulfil the need for a clarification agent for coloured fabrics, containing or consisting of cellulose based fibres, which clarification agent can re-establish the attractive look of fabrics which have developed a greyish appearance (Page 2, lines 15-20).

The agent may contain a cellulase activity corresponding to at least 5 CMC cellulase activity units per gram of agent (Claim 6) in an aqueous liquid (Claim 9).

In the method for treatment of a fabric in order to provide colour clarification or to inhibit colour deterioration, the fabric is treated in an aqueous liquid together with the clarification agent (Claim 12), wherein the pH and temperature of the aqueous medium and the treatment time are selected with a view of obtaining a maximum or substantially maximum cellulolytic action (Claim 14), in particular the cellulolytic activity of the aqueous medium can be above 250 CMC cellulase activity units/litre of aqueous medium (Claim 15).

In the examples of D2, the treating agent is water and cellulase, with a cellulase dosage up to 5 000 CMC units/litre (Example 4), or of 6 000 CMC units/litre (Example 6) or even of 7 500 and up to 10 000 CMC units/litre (Example 5).

According to D2, the cellulase can be used in admixture with additives such as surfactants (page 2, lines 29-31).

7.7 No specific evidence disclosing the prior art of pumice stone-washing has been invoked, so that no description of the used compositions is available. It has not been shown that compositions for stone-washing included enzyme compositions.

7.8 Since Claim 1 concerns a composition of matter (a physical entity), the limitation to purpose defined in said claim does not necessarily limit the composition to the particular purpose defined. The composition defined in Claim 1 may well be suitable for further

purposes, and the same suitability would be a characteristic of all of the compositions containing the same ingredients. Hence, in the present case, the closest prior art can be represented by any document that discloses aqueous compositions containing the critical ingredients (here the cellulase enzyme) for the treatment of cellulosic fibres.

- 7.9 D2 pertains to the same technical field (treatment of cellulosic fibres) as the patent in suit and discloses the use of a cellulase enzyme for cellulolytic action on cellulosic fibres, as in the patent in suit. Also, the purposes of the compositions described in D2 and in the patent in suit are related: clarification of old, dyed cellulosic fabrics in D2; clarification of new, dyed cellulosic fabrics or garments in the patent in suit. Therefore, D2 represents the closest prior art.

*Problem and solution*

- 7.10 The patent specification does not contain any examples that fall within the claims, because the formulations that are referred to as having been used are not stated to contain any surfactant. Hence, it does not illustrate the use of the claimed composition to achieve the purpose as defined, nor does it give any comparison with other compositions, e.g. those of D2, especially those containing a high amount of enzyme.
- 7.11 It is also apparent from the description of the patent in suit that achieving the desired effects depends not only on the claimed composition but also on the conditions of its use (time, type of enzyme, pH, temperature, mechanical agitation, etc.). Hence, the

definition of the aqueous treatment composition in terms of the appropriate amounts of cellulase enzyme and surfactant merely represents a partial solution relating to cellulolytic action on cellulose fibres, which does not necessarily achieve a stone washed effect.

7.12 Since therefore no effect vis-à-vis D2 can be established, the problem to be solved can only be seen in providing a further aqueous treatment composition suitable for cellulolytic action on cellulosic fibres.

7.13 The solution to that problem is represented by the aqueous composition defined in Claim 1 according to Auxiliary Request V, which contains 2 500 CMC units to 30 000 CMC units of a cellulase enzyme composition per litre of aqueous composition as well as 10 to 900 parts of an enzyme compatible surfactant per one million parts of aqueous composition.

7.14 It has not been contested that such a solution can be used for the purposes of the patent in suit and the Board has no reason to take a different position.

#### *Obviousness*

7.15 It has never been argued nor shown that the amount of surfactant defined in present Claim 1 is critical. Hence, in the claimed composition, the surfactant can merely be taken as fulfilling its usual function.

7.16 The claimed compositions differ from those exemplified in D2 by the presence of a surfactant. However, there is an explicit statement in D2, that the aqueous



compositions there described may also contain a surfactant (page 2, lines 29-31). Hence, D2 alone would lead the skilled person towards aqueous treatment compositions for cellulolytic action on cellulosic fibres containing the critical ingredients as defined in Claim 1 in suit.

7.17 Consequently, the claimed composition is obvious over D2.

7.18 It follows from the above that the ground of opposition under Article 100(a) EPC prejudices maintenance of the patent in suit amended according to Auxiliary Request V.

7.19 In view of the above, there is no need for the Board to go into the question whether, if the amount of the surfactant was critical, the disclosure of late filed document D17 would have been combined with that of D2 by the skilled person to obviously arrive at the subject-matter of Claim 1 of Auxiliary Request V.

#### *Auxiliary Request VI*

#### 8. *Amendments*

8.1 Auxiliary Request VI filed during the oral proceedings before the Board consists of only one claim.

8.2 Compared to Claim 1 as granted, Claim 1 according to Auxiliary Request VI contains the following amendments:  
"**The use of** an aqueous composition **to form**, in unsewn dyed cellulosic fabric or a newly manufactured garment made of a dyed cellulosic fabric, a distressed appearance substantially the same as that produced by

conventional pumice stone processing, which aqueous composition consists essentially of ... (the components as defined in Claim 1 according to each of Auxiliary Requests II to V)".

- 8.3 Hence, the category of Claim 1 as granted has been changed from that of an aqueous treatment composition, i.e. a physical entity, to that of the use of an aqueous treatment composition for a particular purpose, i.e. to an activity.
- 8.4 Although Claim 1 according to Auxiliary Request VI concerns the use of a composition, it does not define any process step such as mechanical agitation, contrary to the definition in the method of treating cellulosic fibres defined in Claim 1 of the parent application, and also contrary to the description of the divisional application as filed (page 4, lines 18-25; paragraph bridging pages 5 and 6).
- 8.5 The clear impression given by the original description and claims is therefore that the "distressed appearance substantially the same as that produced by conventional pumice stone treatment" is to be attributed to the combination of "mechanical agitation" and the enzyme composition, and not to the use of the enzyme composition alone. The use, as now formulated, is not supported by the earlier application as filed or by the divisional application as filed.
- 8.6 The argument of the appellants that the claim should be refused on the ground of double patenting, because the claim was substantially identical to claim 1 of the parent patent (granted on an earlier application out of

which the application on which the present application had been granted had been divided out) fails already because the claim 1 now under consideration does not require the use of mechanical agitation, whereas claim 1 of the parent patent does.

- 8.7 The use claim of Auxiliary Request VI however raises such serious objections of lack of support for the purposes of Articles 84, 100(c) and 123(2) EPC, issues that have never before been addressed in the opposition or appeal proceedings, that the Board is not prepared to exercise its discretion in favour of allowing this request into the proceedings at such a late stage.

## **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:

T. Buschek

S. Perryman