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**Datasheet for the decision  
of 25 October 2006**

**Case Number:** T 0062/02 - 3.3.07

**Application Number:** 95910625.3

**Publication Number:** 0749505

**IPC:** D06M 11/40

**Language of the proceedings:** EN

**Title of invention:**

Fibre treatment

**Patent Proprietors:**

Lenzing Fibers Limited

**Opponents:**

Lurgi Zimmer Aktiengesellschaft

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 54, 84, 111, 123

EPC R. 57a

**Keyword:**

"Claim 1 - interpretation (Main Request)"

"Novelty - new use of known substance (no) (Main Request)"

"Amendments - broadening of claim (no) - added subject-matter (no) (Auxiliary Request I)"

"Novelty - new use of known substance (yes) (Auxiliary Request I)"

"Remittal (yes) (Auxiliary Request I)"

**Decisions cited:**

G 0005/83, G 0001/92, G 0002/88, T 0582/88, T 0848/93

**Catchword:**

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Case Number: T 0062/02 - 3.3.07

**DECISION**  
of the Technical Board of Appeal 3.3.07  
of 25 October 2006

**Appellants:**

(Patent Proprietors)

Lenzing Fibers Limited  
1 Woodborough Road  
Nottingham, NG1 3FG (GB)

**Representative:**

Hanson, William Bennett  
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**Party to the proceedings  
under Article 107 EPC,  
second sentence:**  
(Opponents)

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**Representative:**

Grünecker, Kinkeldey,  
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**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted 14 December 2001  
revoking European patent No. 0749505 pursuant  
to Article 102(1) EPC.**

**Composition of the Board:**

**Chairman:** S. Perryman  
**Members:** G. Santavicca  
F. Rousseau

## Summary of Facts and Submissions

I. The appeal is against the decision of the Opposition Division to revoke European patent 0 749 505, which claims a priority date of 9 March 1994, and whose sole independent claim as granted read as follows:

"1. A method of treating lyocell fibre in order to improve the colour properties thereof, characterised in that it includes the step of mercerising the fibre."

II. The patent had originally been opposed solely on the ground that the claimed subject-matter lacked an inventive step (Article 100(a) EPC) having regard to three documents. Further documents later cited included the following, enclosed in the patent proprietors' letter dated 23 February 2001:

D1: J M Taylor and P Mears, "*Synthetic Fibres in the Dyehouse - The manufacturer's role*", Journal of the Society of Dyers and Colourists (JSDC), Volume 107, February 1991, pages 64-69.

III. In the decision under appeal the Opposition Division revoked the patent as granted (sole request) for lack of novelty over D1 on the basis of reasoning which can be summarised as follows:

(a) Since D1 was directed to the effect of the mercerisation process upon the dyeing properties of cellulose based fibres, including lyocell fibres as mentioned in Claim 1, there existed *de facto* no

difference between what was disclosed in D1 and what was now claimed.

- (b) The term "in order to improve ...", only described a special effect which resulted from a known process, and the discovery of a specific effect of a known method and the mentioning of the operator's intention to achieve this effect in Claim 1, did not serve to make the claimed method new.
- (c) For the same reasons decision G 0005/83 (OJ 1985, 64), invoked by the proprietors during the oral proceedings, was not relevant to the case.

IV. The patent proprietors (appellants) lodged an appeal against that decision and paid the appeal fee. In their statement setting out the grounds of appeal, they requested maintenance of the patent as granted or on the basis of one of three auxiliary requests filed therewith.

V. By letter dated 26 September 2005 the opponents withdrew their opposition, and thus ceased to be a party to the proceedings as regards the substantive issues. Prior to withdrawing the opposition, they had made a response to the grounds of appeal, including the following argument against maintenance of the patent on the basis of the claims as granted:

- (d) D1 showed that before the priority date of the patent in suit lyocell fibres mixed with cotton fibres had been mercerised and dyed, which resulted in an enhanced colour depth.

- (e) Even if D1 did not mention that the mercerisation procedure was carried out in order to improve the colour properties of the fabric, the method of D1 nevertheless contained all of the steps defined in Claim 1 in suit, such that the claimed effect was unavoidably achieved.
- (f) Consequently, the claimed method lacked novelty.

VI. By letter dated 21 September 2006, in response to a communication of the Board in preparation of the oral proceedings, the appellants enclosed amended auxiliary requests replacing those already on file.

VII. Oral proceedings were held on 25 October 2006. After a discussion on the contents of Claim 1 according to the main request, on the one hand, and of D1, on the other hand, the appellants submitted 6 sets of amended claims as Auxiliary Requests I to VI, replacing the auxiliary requests on file.

The only independent Claim of Auxiliary Request I read as follows:

"1. The use of aqueous sodium hydroxide in a step of mercerising lyocell fibre before dyeing in order to provide a dyed lyocell fabric which does not exhibit a frosted appearance and which does not develop such a frosted appearance after repeated laundering.".

VIII. The appellants, in writing and/or orally, essentially argued as follows:

*Main request*

- (g) The term "colour properties" in Claim 1 was to be read in accordance with what was said in the description of the patent in suit, i.e. it referred to no exhibition or development of frosted appearance. Claim 1 did not cover any other colour property.
- (h) In the method described in D1 no frosting appearance would have ever arisen, because lyocell fibre fibrillated when subjected to mechanical abrasion in a wet state, whereas D1 had to do with printing of dyes, which did not require wetting and mechanical abrasion of lyocell fibre susceptible to cause fibrillation.
- (i) The disclosure of D1 of mercerising a fabric containing a blend of cotton and lyocell fibres, showed the use of mercerisation only to improve the colour properties of the cotton fibres. For the lyocell fibres it disclosed only that these would tolerate mercerisation.
- (j) The method described in D1 had only been carried out on samples in the laboratory. Those samples were not made available to the public. Thus, an analysis by the public of their intrinsic characteristics in the sense of decision G 0001/92 (OJ 1993, 277) was not possible.
- (k) Decision G 0002/88 (OJ 1990, 93) established the principle that a newly discovered technical effect could confer novelty on an invention even if that

technical effect might have inherently taken place in the course of carrying out what had previously been made available to the public.

- (l) Decisions G 0005/83 (*supra*), T 0582/88 (not published in the OJ; Case Law of the Boards of Appeal of the EPO, 4th edition, I.C.5.3.1(b)) and T 0848/93 (EPOR 03, 350; Special edition of the OJ 1999, 16) showed that the principles enunciated in G 0002/88 (*supra*) were applicable to method claims as well as to use claims.
  
- (m) As to whether the feature of improving the colour properties in an article still to be dyed was a deliberate action or an intention, there was a structural difference between lyocell fibres mercerised according to the invention and unmercerised lyocell fibres, which structural difference could be determined by dyeing the fibre and assessing its colour properties.

*Auxiliary Request No. 1*

Claim 1 of Auxiliary request I had been drawn up in the form according to G 0002/88 (*supra*, i.e. use of a product to obtain a particular effect). The sought-for effect as mentioned in the description had now been defined in the claim.

- IX. The appellants (proprietors) requested that the decision under appeal be set aside and that the case be remitted to the first instance for further prosecution on the basis of as Main Request the claims as granted or on the basis of the claims of one of Auxiliary

Requests I to VI submitted at oral proceedings on  
25 October 2006.

## **Reasons for the Decision**

1. The appeal is admissible.

### *Main request*

2. *Novelty*

- 2.1 Article 84 and Rule 29 EPC lay down that the claims shall define the matter for which protection is sought in terms of the technical features of the invention. To determine whether or not there is novelty over D1, it is thus necessary to consider what are the technical features of Claim 1.

- 2.2 *How Claim 1 should be construed*

- 2.2.1 The Board considers that Claim 1 requires not merely that lyocell fibre be treated by mercerising the fibre, but that such mercerisation be a step in a "method of treating lyocell fibre in order to improve the colour properties thereof", so that the activity implied by having an intention to achieve and actually achieving improved colour properties is to be treated as a functional technical effect in the sense of decision G 0002/88 (*supra*). Decision G 0002/88 was specifically concerned with a "use of a known compound for a particular purpose", but as made clear in decision G 0005/83 (*supra*, see in particular point 11) whether an activity is stated as a method of carrying out an



activity or as the use of a thing for a stated purpose is merely a matter of preference.

- 2.2.2 As stated by the Enlarged Board in G 0002/88 point 10 (*supra*), when considering novelty of such a feature "a line must be drawn between what is in fact made available, and what remains hidden...". That a previously described use would inherently have had the same technical effect as what is now claimed can be ignored under Article 54(2) EPC because a hidden or secret use has not been made available to the public.
- 2.2.3 When construing a claim, the terms used in it should be given their ordinary meaning in their context. The context here is the field of fibres used for fabrics, and how the skilled person in this field would understand the terms used. The ordinary meaning of "colour properties" can only be taken as a broad one, referring to any property of fibres likely to affect their colour or ability to be coloured, such as the natural colour of the fibres, their dye receptivity, uniformity of dyeing, frosted appearance and the like.
- 2.2.4 The appellants are contending for a very much narrower meaning of "colour properties" as being confined "to provide dyed lyocell fabric which does not exhibit a "frosted" appearance and which does not develop such a "frosted" appearance after repeated laundering" based on a passage in the description (paragraph [0005] of granted patent, lines 1 to 22, equivalent to page 2, line 21 to page 3, line 5 as filed)) reading:

"It is an object of the present invention to provide dyed lyocell fabric which does not exhibit

a "frosted" appearance and which does not develop such a "frosted" appearance after repeated laundering. This improvement is referred to hereinafter as improving the colour properties of the lyocell fabric. This term "colour properties" is to be distinguished from the terms "uniform dyeability" and "level dyeing" commonly used in the art. In general, the levelness of dyeing of a fabric does not change on repeated laundering. Cotton is a natural fibre, and its dyeability varies from fibre to fibre. In contrast, lyocell fibres are made by a controlled manufacturing process and exhibit uniform dyeability. Cotton does not fibrillate, and so its colour properties do not change during processing or laundering. The colour properties of known lyocell fabric may change depending on the type of treatment to which it is subjected. For example, repeated laundering commonly induces fibrillation and worsens the colour properties of lyocell fabric, whereas enzyme (cellulase) treatment removes fibrils and generally improves the colour properties of the fabric."

- 2.2.5 However, in the absence of any indication in the claim that "colour properties" is used in any special sense, "colour properties" cannot be confined to this contended for narrow meaning. To do so would not be to interpret the claim, but to use the description to rewrite the claim and redefine the technical features required by the claim in an unusual way. This cannot be justified either on ordinary principles of claim construction, as everything that appears in the description cannot be treated as part of the context of the claim, or by reference to Article 69 EPC and the

protocol thereto. The purpose of Article 69 EPC and its protocol was to allow the extent of protection conferred by the claims to be interpreted more liberally on the basis of the description and drawings than might have followed from giving the wording of the claim its strict literal meaning, and not to allow a claim to be restricted by the description to something much narrower than what is suggested taking the wording of the claim literally. Whether a court considering infringement might choose to limit the extent of protection conferred by a claim to less than the literal meaning of the claim because of some limitation stated in the description is a matter for such court. In proceedings before the European Patent Office, if a proprietor wishes to argue for a narrow scope of the claim this should be on the basis of the wording of the claim, and not on the basis of something appearing only in the description, as in such EPO proceedings the proprietor has the possibility, subject to meeting the requirements of Article 123(2) EPC, of restricting the wording of the claim to reflect the meaning he is contending for.

- 2.2.6 The passage of the description cited in point 2.2.4 of the present decision while making clear that "improving the colour properties" refers to the avoidance of frosted appearance achieved by the claimed mercerisation step, is not so clear as to whether other properties such as the mentioned "uniform dyeability" or "level dyeing" are distinguished because they are not "colour properties", or because they are not "colour properties affected by laundering" and thus not improved by the process now claimed. The passage also leaves it open how dye receptivity or dye yield, which

on ordinary usage are as much a "colour properties" of a fibre as would be frosted appearance, are to be treated.

- 2.2.7 On the facts of this case the Board can thus only give the term "colour properties" in Claim 1 in suit its ordinary broad meaning of being a reference to any property of fibres likely to affect their colour or ability to be coloured, such as the natural colour of the fibres, their dye receptivity, dye yield, uniformity of dyeing, frosted appearance and the like.

### 2.3 *Contents of D1*

- 2.3.1 D1 is a report in a journal of a presentation entitled "*Synthetic fibres in the dyehouse - the manufacturers' role*" given on behalf of Courtaulds Research by two of their staff, one of whom (J M Taylor) was the inventor named in the patent in suit and present at the oral proceedings before the Board.

D1 is made up of two parts, a first part addressing the properties of the lyocell fibre Tencel<sup>(R)</sup> and the diacetate fibre Xtol<sup>(R)</sup> and a second part which is a summary of a discussion on those properties, in particular their dyeability, between *inter alia* the inventor of the patent in suit (J M Taylor) and some interested visitors. The first part of D1 relating to the presentation discloses that:

- Lyocell Tencel<sup>(R)</sup> fibres possess "extremely good dyeing characteristics" and "their yield of reactive dyes is exceptional, particularly in

prints" (page 65, left column, first complete paragraph).

- The yield of reactive dyes on Tencel<sup>(R)</sup> was very good by all relevant dyeing methods, but especially when the dyes were applied by printing (page 66, left column, first paragraph, first sentence).
- Although it was common practice to increase the dye receptivity of conventional viscose and cotton for printing by causticisation and mercerisation respectively, with Tencel<sup>(R)</sup> fibres this process was unnecessary (*ibidem*, first paragraph, third sentence).
- As a cellulose fibre, Tencel<sup>(R)</sup> could be dyed with dyes selected from any of the classes normally used for cotton (*ibidem*, second paragraph, first sentence).
- The dyeing properties of Tencel<sup>(R)</sup> in its 100% form or in blends with cotton and regular viscose were being actively investigated then (*ibidem*, second paragraph, last sentence).
- The high yield on Tencel<sup>(R)</sup> meant that some care was required when dyeing cotton blend fabrics, because of partitioning effects (*ibidem*, third paragraph, first sentence).
- Research work into the partitioning behaviour of reactive dyes on 50/50 Tencel<sup>(R)</sup>/cotton blends had identified how dye yields on individual fibres

could be affected by modification of the dyeing method (*ibidem*, fourth paragraph, first sentence).

- A new method variant, still in its development stage, which would only involve a straightforward alteration in dyeing process, would increase the number of dyes that would give acceptable solid dyeings (*ibidem*, fourth paragraph, second sentence).
- Consistency of product in terms of its dyeing property was important, and was routinely monitored by carrying out dye affinity tests using dyes specifically selected for the assessment of this important property (*ibidem*, fifth paragraph).
- Tencel<sup>(R)</sup> fibre displayed very high wet strength and stability during processing (*ibidem*, last paragraph).

The second part of D1 (Discussion, on page 68, right column) sets out the following question by a visitor and answer by Mr. Taylor:

Question:

"Reactive dye yields on Tencel were shown to be higher than those on unmercerised cotton and uncausticised regular viscose. What is the situation after causticising Tencel, or indeed can Tencel be causticised? Also how does causticised Tencel dye yield compare with those of unmercerised cotton and causticised viscose?"

Answer:

"Our investigations have shown dye yields on Tencel to be superior to those on Courtaulds viscose and standard cotton both before and after causticisation/mercerisation. Tencel is more resistant to the effects of caustic soda than was viscose and indeed can be mercerised in a blend with cotton unlike viscose. Normal viscose causticisation levels of about 4% sodium hydroxide need to be increased to about 8% to show an effect on Tencel".

- 2.4 From this question and answer in the Discussion part of D1, the Board considers that the skilled man is told that if Tencel<sup>(R)</sup> fibre is causticised/mercerised with a level of sodium hydroxide of 8% this will show an effect on the dye yield, that is on a colour property, of the Tencel<sup>(R)</sup> fibre. Any modification of the dye yield can be treated as an improvement in the colour properties, as an increase might be advantageous for some purposes, and even a decrease might be advantageous to give a better match to the dye yield of cotton in cotton/Tencel<sup>(R)</sup> blends. At the oral proceedings the inventor confirmed there was a slight increase. Thus, on the interpretation given by the Board to "colour properties" in Claim 1, D1 discloses an improvement in these using a step of mercerisation, and so destroys the novelty of Claim 1 in suit. The main request must consequently be refused.

*Auxiliary Request I*

3. *Amendments*

3.1 Compared to Claim 1 as granted, Claim 1 according to Auxiliary Request I includes the following amendments:

- (a) "The use of sodium hydroxide in a step of mercerising lyocell fibre before dyeing".
- (b) "to provide dyed lyocell fabric which does not exhibit a "frosted" appearance and which does not develop such a "frosted" appearance after repeated laundering".

3.2 As regards the first amendment, the explicit mention of use of sodium hydroxide can be treated as a narrower statement of the original term "mercerisation" based on the application as filed (Page 5, lines 6-8, in combination with Page 3, lines 9-11 and Page 4, lines 16-20,; Examples). Also the use of aqueous sodium hydroxide in a step of mercerising lyocell fibre before dyeing has a basis in the passages of the application as filed mentioned above. Hence, no new matter has been added by the first amendment to Claim 1, and the requirements of Article 123(2) EPC are fulfilled.

3.3 As regards the second amendment, it is based on the first sentence of Paragraph [0005] of the patent in suit, discussed above (Point 2.2.4), which paragraph has a basis in the application as filed (Page 2, line 21 to Page 3, line 5). Hence, Article 123(2) EPC is complied with.



3.4 As stated above a use claim to achieve a particular effect is the equivalent of a method of treatment to achieve that effect, so the (first and second) amendments to Claim 1 merely bring out that the claim takes the form considered in G 0002/88 (*supra*) as allowing the intended technical effect to be considered a technical feature and the requirements of Article 123(3) EPC are fulfilled.

3.5 Claim 2 according to Auxiliary Request I has a basis in Claim 2 as filed, and Claim 3 in Claims 1, 3 and 4 as filed. Hence, also the amendments to the dependent claims comply with Article 123(2) EPC.

3.6 The amendments have been carried out to overcome the ground of opposition under Article 100(a) EPC, lack of novelty, and thus fulfil the requirements of Rule 57a EPC.

#### 4. *Novelty*

4.1 For D1 to destroy the novelty of Claim 1 of Auxiliary Request I, it would be necessary that D1 discloses the use of aqueous sodium hydroxide in a mercerisation step "to provide dyed lyocell fabric which does not exhibit a "frosted" appearance and which does not develop such a "frosted" appearance after repeated laundering", as in accordance with G 0002/88 (*supra*) (Point 10.3 of the Reasons) the avoidance of this effect is to be treated as a technical feature of the claim.

4.2 The Board can see nothing in the disclosure of D1 (see Point 2.3.1 of the present decision, *supra*) that even discusses the question of avoidance of a frosted

appearance, let alone suggests using mercerisation to prevent the problem from arising.

4.3 D1 is not evidence of a prior public use, but rather the information made available to the public by D1 is confined to what it actually says. That D1 suggests that mercerisation has an effect on dye yield could only be taken into account when considering lack of inventive step. It is, however, questionable whether D1 even meets the criteria for being treated as the closest prior art document, which would in accordance with Board of Appeal case law rather be a document relating to attempts to solve the same problem, i.e. the avoidance of a frosted appearance.

4.4 Claim 1 of Auxiliary Request I thus meets the requirements of Article 54(2) EPC in relation to D1. As the Board has only been concerned with D1, but not the other documents in the case, and the question of inventive step has yet to be considered, the Board considers it appropriate to exercise its discretion under Article 111(1) EPC in favour of remittal of the case for further prosecution to the first instance.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.
  
2. The case is remitted to the first instance for further prosecution on the basis of Claims 1 to 3 of Auxiliary Request I submitted at oral proceedings on 25 October 2006.

The Registrar:

The Chairman:

C. Eickhoff

S. Perryman