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**Datasheet for the decision
of 18 June 2025**

Case Number: T 1127/23 - 3.3.03

Application Number: 17804813.8

Publication Number: 3529282

IPC: C08B16/00, D01F2/06

Language of the proceedings: EN

Title of invention:

RECYCLING OF CELLULOSIC TEXTILES

Patent Proprietor:

Circulose AB

Opponents:

Schwarz & Partner Patentanwälte GmbH
Södra Skogsägarna Ekonomisk Förening

Relevant legal provisions:

EPC Art. 14(4), 56, 99(3)

EPC R. 6(2)

RPBA 2020 Art. 12(4), 12(6) sentence 2, 13(2)

Keyword:

Admissibility of appeal - transfer of opponent status (yes) - entitlement to appeal (yes)

Late-filed facts - should have been submitted in first-instance proceedings (yes)

Languages of the EPO - translation into official language of the EPO (missing)

Inventive step - effect not made credible within the whole scope of claim - obvious alternative

Amendment to case - admissibly raised and maintained (no) - basis for amendment indicated (no) - reasons for submitting amendment in appeal proceedings (no) - amendment admitted (no)

Late-filed request - should have been submitted in first-instance proceedings (yes)

Amendment after expiry of period in R. 100(2) EPC communication - exceptional circumstances (no)

Decisions cited:

G 0004/88, G 0002/04, T 0364/20



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Case Number: T 1127/23 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 18 June 2025

Appellant 1: Schwarz & Partner Patentanwälte GmbH
(Opponent 1) Wipplingerstraße 30
1010 Wien (AT)

Representative: Schwarz & Partner Patentanwälte GmbH
Patentanwälte
Wipplingerstraße 30
1010 Wien (AT)

Appellant 2: Södra Skogsägarna Ekonomisk Förening
(Opponent 2) Skogsudden
351 89 Växjö (SE)

Representative: Valea AB
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Respondent: Circulose AB
(Patent Proprietor) Box 16116
103 23 Stockholm (SE)

Representative: Ström & Gulliksson AB
Box 5275
102 46 Stockholm (SE)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 19 April 2023
rejecting the oppositions filed against European
patent No. 3529282 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman	D. Semino
Members:	M. Barrère
	L. Basterreix

Summary of Facts and Submissions

I. The appeals of the opponents lie from the decision of the opposition division rejecting the oppositions against European Patent No. 3 529 282.

II. Claim 1 as granted read as follows:

"1. A method for recycling textiles comprising cellulose, said method comprising the sequential steps:

- a. providing at least one textile material comprising cellulose,
- b. treating the material to swell the cellulose, under reducing conditions, wherein at least one reducing agent is present at least during a part of the swelling,
- c. performing at least one of the following two bleaching steps in any order
 - i. bleaching the material with oxygen at alkaline conditions with a pH in the range 9-13.5, and
 - ii. bleaching the material with ozone at acid conditions below pH 6."

III. The following documents were *inter alia* cited in the decision of the opposition division:

D1: US 3,318,657
D3: WO 2013/124265 A1
D14: US 5,609,676

IV. The contested decision, as far as it is relevant to the present appeal, can be summarised as follows:

- The subject-matter of granted claim 1 involved an inventive step starting from document D3 as the closest prior art.

V. Opponents 1 and 2 (appellants 1 and 2) filed an appeal against said decision. The following document was submitted by appellant 2 with their statement of grounds of appeal:

D39: US 2,841,579

VI. With the rejoinder to the statement of grounds of appeal, the patent proprietor (respondent) submitted the following document:

D40: letter from opponent 2 to the Swedish Patent and Market Court dated 10 November 2023

VII. On 26 February 2024 the proceedings before the European Patent Office (EPO) were interrupted owing to bankruptcy proceedings opened against the then patent proprietor "Re:NewCell AB".

VIII. On 2 December 2024 the proceedings were resumed with the new patent proprietor and respondent in the present case: "Circulose AB".

IX. With letter of 19 December 2024 the respondent filed the following document:

D41: decision of the Swedish Patent and Market Court concerning Patent No. SE 541 675

X. The parties were summoned to oral proceedings and a communication pursuant to Article 15(1) RPBA indicating

specific issues to be discussed at the oral proceedings was then sent to the parties.

XI. With letter of 7 March 2025 the respondent filed seven sets of claims as seventh to thirteenth auxiliary requests as well as the following documents:

Reference 2: Johansson, E. (2003), Free radical mediated cellulose degradation. PhD thesis, Trita-KKE. Stockholm, Kemi, pages 54 to 60

Reference 3: Ji, Y. (2007), Kinetics and Mechanism of Oxygen Delignification, PhD Thesis, The University of Maine, pages 27 to 30

Reference 6: Ji, Y. (2007), Kinetics and Mechanism of Oxygen Delignification, PhD Thesis, The University of Maine, pages 154 to 156

Reference 7: Heath, A. A., *et al.*, (2013), "Effects of temperature, oxygen level, ionic strength, and pH on the reaction of benzene with hydroxyl radicals in aqueous atmospheric systems", Journal of Environmental Chemical Engineering, 1(4), pages 822 to 830

XII. Oral proceedings were held before the Board on 18 June 2025. At the end of the oral proceedings, the parties' final requests were as follows:

- The appellants requested that the decision under appeal be set aside and the patent be revoked.
- The respondent requested that the appeal of appellant 1 be rejected as inadmissible. The respondent also requested that the appeals be dismissed and the patent be maintained as granted. In the alternative the respondent requested maintenance of the patent in amended form on the

basis of one of the first to thirteenth auxiliary requests, whereby

- the first to third auxiliary requests were filed with the reply to the notices of opposition,
- the fourth to sixth auxiliary requests were filed with letter dated 21 December 2022 and
- the seventh to thirteenth auxiliary requests were filed with letter dated 7 March 2025.

XIII. The respondent's main request corresponded to the patent as granted (reference is made to point II. for the wording of claim 1).

Claim 1 of the first auxiliary request was amended with respect to claim 1 of the main request by adding the expression:

"d) recovering the cellulose and using the cellulose for making new textiles or for any other purpose where cellulose is used".

Claim 1 of the second auxiliary request was amended with respect to claim 1 of the first auxiliary request by adding the following expression at the end of step b.:

"wherein the pH during step b) is in the range of 9-13.5".

Claim 1 of the fourth auxiliary request was amended with respect to claim 1 of the second auxiliary request by adding the following expression at the end of step b.:

"wherein the temperature during step b) is in the range 50-100°C".

Claim 1 of the third and fifth auxiliary requests was amended with respect to claim 1 of the second and fourth auxiliary requests, respectively, by adding the following expression at the end of step b.:

"and wherein the at least one reducing additive comprises sodium dithionite, $\text{Na}_2\text{S}_2\text{O}_4$ ".

Claim 1 of the sixth auxiliary request was amended with respect to claim 1 of the fourth auxiliary request by adding the expression:

"wherein the textile is mechanically disintegrated to at least partially disintegrate the cellulose before step b)".

Claim 1 of the seventh to thirteenth auxiliary requests was amended with respect to claim 1 of the main request and the first to sixth auxiliary requests, respectively, by replacing step c. of claim 1 with the following step:

"c. bleaching the material with ozone at acid conditions below pH 6".

The remaining claims of these requests are not relevant to this decision.

XIV. The parties' submissions, in so far as they are relevant to the present decision, can be derived from the reasons for the decision set out below. They essentially concerned the following issues:

- the admissibility of the appeal of appellant 1,
- the admittance of documents D39 to D41 and references 2, 3, 6 and 7,
- whether claim 1 of the main request and the first to third auxiliary requests involved an inventive step starting from D3 as the closest prior art and
- the admittance of the first to thirteen auxiliary requests into the proceedings.

Reasons for the Decision

1. Admissibility of the appeal of appellant 1
- 1.1 The respondent argued that the appeal of appellant 1 (Schwarz & Partner Patentanwälte GmbH) was inadmissible because the transfer of the opposition was not allowable (rejoinder to statements of grounds of appeal, page 2 to page 4, second full paragraph and letters dated 9 December 2024, pages 1 to 3, 7 March 2025, pages 4 to 7, and 20 May 2025, pages 5 to 7). Their arguments are as follows:
 - According to G4/88 an opposition pending before the European Patent Office may be transferred or assigned to a third party as part of the opponent's business assets together with the assets in the interests of which the opposition was filed. Further according to point 5 in the reasons for the decision in G4/88, it was stated that in this context the term "business" must be understood in a broad sense as describing an economic activity which was or could be carried on by the opponent and which constituted a specific part of their business assets.
 - Appellant 1 admitted to be acting as a straw man on behalf of a third party. This meant that original opponent 1 (Schwarz & Partner Patentanwälte OG) did not pay for the opposition, but rather, another party paid them to file it. Since a third party paid for the opposition, the opposition was a business asset in the third party's book according

to the general principles of bookkeeping. Therefore the opposition was not an asset of "Schwarz & Partner Patentanwälte OG" which could be transferred to "Schwarz & Partner Patentanwälte GmbH". Moreover, "Schwarz & Partner Patentanwälte OG" did not have the control over the opposition as a business asset since they were not in a position to take the decision to withdraw the appeal. Only the party who paid for the opposition could have instructed "Schwarz & Partner Patentanwälte OG" to withdraw the opposition and take other procedural steps regarding the opposition proceedings.

- It was not questioned that the firm "Schwarz & Partner Patentanwälte GMBH" was the universal successor of the firm "Schwarz & Partner Patentanwälte OG". This was however irrelevant since the opposition was not an asset of "Schwarz & Partner Patentanwälte OG" from the beginning and could not have been transferred by universal succession.
- Therefore, the transfer of the opposition to "Schwarz & Partner Patentanwälte GmbH" was invalid and appellant 1 was not entitled to file an appeal.

During the oral proceedings before the Board, the respondent submitted that an opponent acting as a straw man could not transfer the opposition to another straw man or company. Such a transfer would be an abuse of procedure, which decision G4/88 intended to prevent. The respondent did, however, acknowledge that there was no evidence or suspicion of abuse of procedure in the present case, but argued that it could be the case in a different situation where the sale of an opposition could be used as a strategic tool.

1.2 Appellant 1 disagreed with the patent proprietor's view that the appeal was inadmissible, primarily by contending that the opposition was validly transferred (letters dated 14 February 2024, pages 1 to 2, and 16 May 2025, page 3). Their arguments are as follows:

- The transfer of assets from "Schwarz & Partner Patentanwälte OG" to "Schwarz & Partner Patentanwälte GmbH" was a case of universal succession. This legal concept implied that all assets and liabilities of the OG firm were automatically transferred to the GmbH firm, including the opposition.
- Appellant 1 had no connection with appellant 2, so that the transfer of opposition resulting from universal succession could not constitute an abuse of procedure.

1.3 The respondent's contention raises the question whether the firm "Schwarz & Partner Patentanwälte GmbH" was entitled to act as opponent and appellant in the present case.

The status of opponent cannot be freely transferred (see G2/04, order, reply to question I.(a)). The opponent does not have a right of disposition over its status as a party. In decision G4/88, the Enlarged Board of Appeal distinguished between two cases in which the status of opponent may however be transferred:

- in the case of universal succession of the opponent (point 4 of the Reasons), or

- when a relevant part of the opponent's business has been transferred, in which case the transfer or assignment of the opposition to a third party must be made as part of the transfer or assignment of the opponent's business assets together with the assets in the interests of which the opposition was filed (points 5 and 6 of the Reasons).

1.4 In the present case, it is not disputed that the firm "Schwarz & Partner Patentanwälte GmbH" is the universal successor of "Schwarz & Partner Patentanwälte OG". Appellant 1 did provide a document proving the transfer of all assets (Vermögensübernahme) from "Schwarz & Partner Patentanwälte OG" to "Schwarz & Partner Patentanwälte GmbH" and therefore their status as universal successor (MANZ Firmenregister, Annex to appellant 1's letter dated 14 February 2024). The respondent, however, disputes that the opposition ever formed part of the business assets of "Schwarz & Partner Patentanwälte OG", since appellant 1 acknowledged that "Schwarz & Partner Patentanwälte OG" had acted as a straw man when filing an opposition. Since the opposition never formed part of their assets, it could not have been transferred with all other assets to "Schwarz & Partner Patentanwälte GmbH" as part of the universal succession.

1.5 The Board is not convinced by the respondent's arguments. In view of decision G4/88, the status of opponent is validly transferred in the case of universal succession without further requirements having to be fulfilled. It implies that, in the case of universal succession, there is no need to make a further distinction between the opponent acting as a straw man or in its own interests, nor is it necessary

to examine whether the opposition that has been filed can be considered as an asset of the opponent, to determine whether the status of opponent has been validly transferred. Such a distinction would add an additional condition to those provided for in point 4 of the Reasons in G4/88, which was not foreseen therein. Only when part of the opponent's assets have been transferred, it is necessary to examine whether the opposition relates to the opponent's business assets and could therefore have been transferred at the same time as those assets. In the present case, since a universal succession has taken place, the opposition was validly and automatically transferred to the universal successor in law of "Schwarz & Partner Patentanwälte OG" from the date of the effective succession, regardless of whether "Schwarz & Partner Patentanwälte OG" acted as a straw man.

1.6 The payment of the opposition costs by a third party and the general principles of bookkeeping are also not relevant in the context of a universal succession since it is not necessary to examine whether a particular asset, and the opposition relating to it, has been transferred. Furthermore, accounting rules cannot have any bearing on a party's status. The status of opponent is purely procedural, and the basis on which it is obtained is a matter of procedural law governed by the EPC.

1.7 For the same reasons, the question of who has control over opposition proceedings and can decide, i.a., to withdraw the opposition, is not relevant for determining who can act as opponent. A person who fulfils the requirements of the EPC for filing an opposition becomes a party to the opposition proceedings (Article 99(3) EPC), and in these

proceedings, only the procedural acts performed by this party are relevant, regardless of the instructions they may receive from a third party.

1.8 Finally, the respondent acknowledged that there was no abuse of procedure in the present case. The Board does not see how the possibility of such an abuse occurring in other situations could be a valid ground for deciding that, in this case, appellant 1 does not have the status of opponent and appellant, and for declaring their appeal inadmissible.

1.9 The Board therefore concludes that the firm "Schwarz & Partner Patentanwälte GmbH" was entitled to act as opponent and appellant in the present case and that their appeal is admissible.

2. Admittance of late-filed documents

2.1 Document D39

2.1.1 D39 is a new item of evidence filed by appellant 2 with the statement of grounds of appeal. Its admission to the proceedings, which is contested by the respondent (rejoinder, paragraph bridging pages 22 and 23), is subject to the discretionary power of the Board in accordance with Article 12 paragraphs (4) to (6) RPBA.

2.1.2 This document is directed to establishing that the concept of "ripening" as disclosed in D14 would be understood by a skilled person as an oxidative depolymerisation (statement of grounds of appeal of appellant 2, page 9, section 33).

2.1.3 During the oral proceedings before the Board, appellant 2 stated that D39:

- represented common general knowledge in the present technical field and
- was filed in reaction to the decision in which the opposition division considered that document D14 was not a suitable closest prior art because it did not disclose a bleaching step (contested decision, page 15, last paragraph).

2.1.4 The Board fails to recognise a clear link between the contested decision and the filing of D39. Firstly, appellant 2 did not suggest to start from document D14 as the closest prior art for the assessment of inventive step. The filing of D39 to overturn the decision on that issue is therefore not justified. Secondly, D39 does not appear to relate to any bleaching step. Hence, it is not apparent to the Board why D39 could not have been filed during the opposition proceedings, if at all relevant for appellant 2.

2.1.5 Under these circumstances, the Board finds it appropriate to exercise its discretion under Article 12(6) RPBA by not admitting document D39 into the proceedings.

2.2 Documents D40 and D41

2.2.1 Documents D40 and D41 were filed by the respondent respectively with the rejoinder to the statements of grounds of appeal and with the letter dated 19 December 2024.

2.2.2 During the oral proceedings before the Board, the admittance of these documents was objected to by the

appellants on the grounds that D40 and D41 were not filed in an official language of the EPO.

2.2.3 The respondent contended that they had their principal place of business within Sweden and thus the filing of D40 and D41 in Swedish was acceptable according to Article 14(4) EPC. Furthermore, a translation in English of the relevant part of D40 was provided in the rejoinder to the statement of grounds of appeal (page 25, second paragraph, fifth sentence).

2.2.4 The Board agrees with the respondent insofar as the filing of a document in Swedish was allowable under Article 14(4) EPC, first sentence. However, the second and third sentences of Article 14(4) EPC also stipulate that a translation shall be filed in an official language of the EPO in a time limit according to the Implementing Regulations; otherwise, the document shall be deemed not to have been filed. It is undisputed that the respondent has not filed a translation of D41 at any time. Regarding D40, the Board does not view the passage cited by the respondent in their rejoinder (page 25, second paragraph, fifth sentence) as a translation, but rather as an interpretation of that document. In any case there was no indication therein that such a sentence would be a translation of any part of D40.

2.2.5 Accordingly, in view of the fact that D40 and D41 have not been submitted in an official language of the EPO, they are deemed not to have been filed (Article 14(4) and Rule 6(2) EPC).

2.3 References 2, 3, 6 and 7

- 2.3.1 References 2, 3, 6 and 7 are new items of evidence filed by the respondent with letter of 7 March 2025 and therefore after notification of the Board's communication under Article 15(1) RPBA. Their admission to the proceedings, which is contested by the appellants, is subject to the provisions of Articles 12(4)-(6), 13(1) and 13(2) RPBA.
- 2.3.2 References 2, 3, 6 and 7 have been filed by the respondent to demonstrate that the yield of the process set out in granted claim 1 was independent of the pH of the bleaching step (letter dated 7 March 2025, page 9, penultimate paragraph to page 12, first full paragraph). These documents would provide evidence that an improved yield was obtained when bleaching was carried out under both acidic (step c.ii. of granted claim 1) and alkaline conditions (step c.i. of granted claim 1). They were filed in reaction to a new allegation of fact submitted by appellant 2 in their letter dated 6 March 2024 (page 4, paragraph 13), which stated that the reactivity of the species present during bleaching was strongly pH-dependent. The respondent also argued that these references could not have been filed at an earlier stage due to an interruption of the proceedings from 26 February 2024 to 2 December 2024 owing to bankruptcy proceedings opened against the then patent proprietor. Failing to admit these references into the proceedings would infringe the respondent's right to be heard and constitute a substantial procedural violation (letter dated 20 May 2025, page 5, "Implications").
- 2.3.3 The appellants requested that references 2, 3, 6 and 7 not be admitted into the appeal proceedings. From the onset of the opposition proceedings it had been argued that no technical effect had been made credible for the

alkaline bleaching step c.i. as defined in granted claim 1. Therefore, there was no reason, let alone exceptional circumstances, justifying to admit references 2, 3, 6 and 7 at this late stage of the appeal proceedings (letter of appellant 2 dated 26 May 2025, paragraph bridging pages 1 and 2). In addition, the appellants held that the respondent had sufficient time to file these references before the Board's communication under Article 15(1) RPBA despite the interruption of proceedings owing to bankruptcy.

- 2.3.4 The Board agrees with the appellants that a central point of dispute between the parties was whether a technical problem had been solved by the claimed invention in comparison to the disclosure of D3 taken as the closest prior art. In that regard, it was the contention of appellant 2 from the onset of the opposition proceedings that it had not been demonstrated that any effect was obtained if the alternative oxygen bleaching step under alkaline conditions was used (notice of opposition of opponent 2, page 12, point 4.5 and statement of grounds of appeal of appellant 2, page 3, point 8). In the Board's view, references 2, 3, 6 and 7 were primarily filed to address that criticism by providing evidence that any effect shown for an ozone bleaching step under acidic conditions (step c.ii. of claim 1) would necessarily be present for an oxygen bleaching step under alkaline conditions (step c.i. of claim 1). In so far as the objection of appellant 2 was present from the beginning of the opposition proceedings, the Board considers that references 2, 3, 6 and 7 should also have been filed during opposition proceedings. For that reason, these references should not be admitted already under Article 12(6), second sentence RPBA.

2.3.5 The respondent argued that the references were filed in reaction to a new allegation of fact submitted by appellant 2 in their letter dated 6 March 2024 (page 4, paragraph 13), which stated that the reactivity of the species present during bleaching was "strongly pH-dependent". While this statement may not have been expressed explicitly in the appellants' previous submissions, it had been argued in appellant 2's statement of grounds of appeal that alkaline oxygen bleaching could not, in the absence of supporting data, be expected to have the same effect as acidic ozone bleaching (see page 3, point 8). The Board considers the additional statement that the pH affects the reactivity of the relevant species, and therefore the yield, to be merely a developing argument within the framework of the appellants' initial contention. In addition, the Board does not consider this statement to be relevant to the decision, nor to have the potential to tip the case in favour of the appellants. For these reasons, the presence of an additional statement in the framework of the previous submissions cannot be considered an exceptional circumstance that would justify admitting references 2, 3, 6 and 7 into the proceedings (Article 13(2) RPBA).

2.3.6 Last but not least, these references were filed on 7 March 2025 i.e. about one year after appellant 2's new statement (submitted on 6 March 2024) and one month after the Board's communication under Article 15(1) RPBA (dated 6 February 2025). Although it is true that the proceedings were interrupted for the respondent from 26 February 2024 to 2 December 2024, the Board considers that there was still sufficient time to file references 2, 3, 6 and 7 before the Board's communication (in particular with the respondent's letter dated 19 December 2024). Taking all these

considerations into account, the Board fails to see any exceptional circumstances which would justify the filing of these references after the Board's communication.

- 2.3.7 Under these circumstances, the Board finds it appropriate to exercise its discretion under Articles 12(6) and 13(2) RPBA by not admitting references 2, 3, 6 and 7 into the proceedings.

Main request (patent as granted)

3. Inventive step

- 3.1 In the decision under appeal, the opposition division found that the subject-matter of granted claim 1 involved an inventive step starting from document D3 as the closest prior art. This conclusion is contested by the appellants in their statements of grounds of appeal (statement of grounds of appeal of appellant 1, page 7, seventh paragraph to page 25, first paragraph; statement of grounds of appeal of appellant 2, page 1, paragraph 3 to page 9, paragraph 34).

3.2 Closest prior art and distinguishing features

The parties agree that:

D3 can be selected as the closest prior art for the purpose of assessing inventive step;

the method of granted claim 1 differs from the recycling processes disclosed in D3 (see claim 1) in that it comprises the following step:

"b. treating the material to swell the cellulose, under reducing conditions, wherein at least one reducing agent is present at least during a part of the swelling" (in the following "step b").

The Board has no reason to depart from that view.

3.3 Objective problem to be solved.

3.3.1 A central point of dispute between the parties is whether a technical effect is linked to the above distinguishing feature. While the respondent, in agreement with the opposition division, holds that the effect of step b is an improved yield (rejoinder to the statements of grounds of appeal, page 8 to page 16, second paragraph and page 23, penultimate paragraph to page 29, first full paragraph; letter dated 9 December 2024, page 5, penultimate paragraph to page 8, first full paragraph), the appellants consider that the evidence on file does not support this effect.

3.3.2 In that respect the relevant part of the appellants' contention can be summarised as follows (statement of grounds of appeal of appellant 1, page 8, "No comparison with the closest prior art"; statement of grounds of appeal of appellant 2, page 2, paragraph 6 and page 3, paragraph 8; letter of appellant 2 dated 6 March 2024, page 4, paragraphs 12 and 13):

(a) it was not credible that the alleged yield improvement could be obtained over the whole scope of claim 1 and in particular if the bleaching step was carried out in the presence of oxygen under alkaline conditions;

- (b) the examples provided by the patent proprietor were not representative of D3.

For these reasons (among others), the appellants concluded that no technical effect should be acknowledged starting from document D3 as the closest prior art.

- 3.3.3 With their letter dated 7 March 2025 (page 7, last paragraph to page 12, third full paragraph), the respondent argued that the claimed process improved the overall yield as shown in the comparative tests provided *inter alia* in the opposed patent. This effect was achieved for both the alternative of alkaline oxygen bleaching and the one of acidic ozone bleaching. The burden of proof lay with the appellants to show that the invention did not work throughout the claimed range and specifically that there was no improved yield when oxygen was used in step c.i. However, no such evidence had been produced by them.

Moreover, the appellants did not provide any proof to support their contention that cellulose degradation was pH-dependent, and that alkaline oxygen bleaching would consequently lead to a reduced yield. Therefore, the appellants' arguments were speculative and unsubstantiated.

With that letter, the respondent also submitted extracts from scientific publications (references 2, 3, 6 and 7, which were not admitted into the proceedings), to demonstrate *inter alia* that:

- (i) there was less significant degradation of the cellulose during oxygen bleaching because oxygen oxidised the reducing ends

of cellulose chains, stabilising them and preventing continued "peeling reactions";

- (ii) the cellulose degrading mechanisms that gave lower yield were suppressed by the swelling treatment under reducing conditions of step b). Thereby the yield was increased;
- (iii) hydroxyl radicals were the central species responsible for cellulose degradation in both oxygen and ozone treatments. Since hydroxyl radicals were not pH-sensitive, the argument of the appellants that the yield would not be improved under alkaline conditions was incorrect.

3.3.4 During the oral proceedings before the Board, the respondent argued that oxygen was always present when ozone was produced. Hence, for technical reasons, the bleaching step with ozone (step c.ii of claim 1) could not be carried out without oxygen. It followed that the experimental data provided by the respondent (using ozone as a bleaching agent) was inherently concerned with processes in which oxygen was present. These data would show that the yield was also improved in the presence of oxygen.

3.3.5 The respondent's line of argument raises the following questions:

- (a) the question of the burden of proof for the recognition of a technical effect, and
- (b) whether the evidence submitted by the parties supports a finding of a technical effect (in

particular an improved yield) of the processes of claim 1 over the processes of D3 as the closest prior art.

These points will be addressed separately below.

3.3.6 Burden of proof

- (a) According to established case law, each party bears the burden of proof for the facts it alleges (Case Law of the Boards of Appeal, 11th edition 2025, in the following "Case Law", III.G.5.1.1.).
- (b) In the context of inventive step, the patent proprietor alleges that the invention as defined in the claims leads to an advantageous effect (improved yield). Therefore, contrary to the respondent's view, the burden of proving that effect lies initially with them (Case Law, III.G.5.1.2.c)). Only once the proprietor has provided conclusive evidence to support their allegation, the burden of proof can be shifted to the opponents (Case Law, III.G.5.2.1.).
- (c) The respondent argued that, at least for the appellants' contention that the cellulose degradation (and thus the yield of the claimed process) was pH dependent, the burden of proof was on the appellants. While this is true, this does not change the fact that the burden of proof for the opposite allegation (which is the respondent's contention) lies with the respondent. Even if the Board considers that the first allegation is not proven, that does not mean that the second one is automatically true. Instead, the Board simply cannot decide on that point with the necessary

consequences for the case in hand (see point 3.3.7 below).

3.3.7 Presence of a technical effect?

- (a) As noted previously, the respondent argued that the comparative tests on file showed that the claimed process was characterised by an improved yield compared to the processes of the prior art such as the ones of D3. The yield improvement was obtained independently of the bleaching conditions.
- (b) According to the established case law, if comparative tests are chosen to demonstrate an inventive step on the basis of an improved effect over a claimed area, the nature of the comparison with the closest state of the art must be such that the alleged advantage or effect is convincingly shown to have its origin in the distinguishing feature of the invention compared with the closest state of the art. Moreover, in this respect, it is also important that the comparative tests are representative of the teaching of the closest prior art, in the sense that the effect shown to be caused by the distinguishing feature in the context of the comparative test could also be expected to take place within the framework of the closest prior art (Case Law, I.D.4.3.2). In addition, when defining the technical problem, an effect can only be retained if it is credible that this effect can be obtained throughout the entire range covered by the claimed subject matter (Case Law, I.D.4.3.1).
- (c) In the present case, it is noted that granted claim 1 is directed to a method for recycling textiles

which includes the following alternative bleaching steps:

c.i. bleaching the material with oxygen at alkaline conditions with a pH in the range 9-13.5, and/or

c.ii. bleaching the material with ozone at acid conditions below pH 6.

It was not disputed that all experimental data provided by the respondent are based on a bleaching step with ozone under acid conditions (alternative c.ii). However, as noted by appellant 2, for alternative c.i, no comparative example was provided and no effect on the yield has been shown (statement of grounds of appeal of appellant 2, page 3, paragraph 8).

(d) For the Board, the relevant question is whether it is credible that the effect shown for bleaching step c.ii would also be present for bleaching step c.i. Given that the bleaching conditions are fundamentally different (acidic vs. alkaline), there are at least reasonable doubts as to whether any yield improvement demonstrated under acidic conditions would also be present under alkaline conditions. Therefore, the Board considers that the experimental evidence provided by the respondent (concerning only bleaching step c.ii) does not make it credible that a yield improvement was achieved across the entire scope of claim 1, particularly if bleaching step c.i is applied.

(e) While the respondent provided additional evidence (references 2, 3, 6 and 7) in an attempt to show

that both oxygen and pH should not have a significant effect on the cellulose degradation, this evidence was not admitted into the proceedings (see point 2.3 above). Hence, in the absence of admissible evidence that the degradation of cellulose is influenced (or not) by the pH, that question must be left unanswered. For the sake of completeness, it is not apparent to the Board that these references were likely to change the situation for the following reasons.

- (f) As the appellants pointed out, all of the cellulose recycling processes in D3 are based on an alkaline bleaching step corresponding to step c.i according to granted claim 1 (see claim 1 of D3). It follows that none of the experimental evidence provided by the respondent is representative of the closest prior art, since it is solely based on bleaching step c.ii. Therefore, it is not shown whether the alleged yield improvement, which was demonstrated when a bleaching step c.ii was applied, could also be expected to occur within the framework of D3 with *inter alia* a bleaching step c.i (Case Law, I.D.4.3.2). For that reason, the Board considers that it has not been made credible that a technical problem was solved in comparison with the processes of the closest prior art.

3.3.8 In conclusion, the experimental data on file are not suitable for demonstrating an effect across the entire scope of claim 1, nor are they representative of D3 as the closest prior art. The problem to be solved is thus to be formulated as the provision of an alternative method for recycling textiles.

3.4 Obviousness

3.4.1 It remains to be evaluated whether it was obvious for a skilled person wishing to provide an alternative to the recycling process of D3 to include a step b as defined in granted claim 1.

3.4.2 The appellants essentially argued the claimed solution was obvious in view of the teaching of document D14 (among others) which disclosed a decolourisation step corresponding to step b) (statement of grounds of appeal of appellant 2, page 8, paragraph 30 to page 9, paragraph 32; D14, column 4, lines 32 to 42).

3.4.3 The respondent disagreed with the appellants' contention for several reasons (rejoinder to the statements of grounds of appeal, page 32, penultimate paragraph to page 35, third full paragraph):

- D14 did not relate to the yield of the claimed processes;
- the skilled person would not see any similarities between a ripening step during viscose manufacturing (as set out in D14), where alkaline cellulose is treated, and the alkaline oxygen bleach in D3;
- the reducing step described in D14 was an optional decolourisation step, so that the skilled person would have had no motivation to incorporate it into the methods of D3.

3.4.4 This is not convincing for the following reasons:

- (a) As noted previously, the problem to be solved is merely the provision of an alternative. Hence, document D14 does not have to address the yield of

the process to be relevant for the matter of inventive step.

- (b) Furthermore, the Board does not agree with the respondent that the skilled person would have no motivation to introduce a swelling step under reducing conditions from D14 into the methods of D3. The motivation stems first and foremost from the wish to solve a problem (in the present case to provide an alternative method for recycling textiles) which implies that the skilled person would consider any known step of a recycling process.
- (c) In the present case, D14 relates to methods for recycling of waste textile to viscose (see D14, column 1, lines 30 to 34 and claim 1) and is therefore immediately relevant for the skilled person wishing to provide an alternative recycling process. According to column 4, lines 32-38 in D14 it is possible, if a decolourisation is desired, to treat the material with reducing agents such as sodium bisulphite or sodium dithionite. This process step corresponds to step b, as defined in granted claim 1. As step b was a known step of a textile recycling process, it was an obvious alternative to include it in the process of D3.
- (d) The respondent argued that a skilled person would have no reason to add another decolourisation step since the processes of D3 already included an alkaline oxygen bleach, which efficiently decolourised the textile. Contrary to the respondent's view, there is, however, no evidence that the bleaching step in D3 would be efficient. Consequently, the Board does not see what would

prevent the skilled person from including in the process different treatments designed to decolourise textile waste.

- (e) As to the alleged similarities between the ripening step in D14 and the alkaline oxygen bleach of D3, the Board does not see how this point could be relevant for the combination of the process of D3 with the decolourisation step of D14. The only question that matters is whether a skilled person would have considered it obvious to include process step b as defined in claim 1 in a process according to document D3.

- 3.5 The Board therefore finds that it was obvious for a skilled person wishing to provide an alternative recycling process, to include in the process of D3 a decolourisation step as defined in D14. The subject-matter of granted claim 1 thus lacks an inventive step starting from D3 in combination with D14.

First, second and third auxiliary requests

4. Admittance

- 4.1 The first, second and third auxiliary requests were initially filed by the patent proprietor with the reply to the notices of opposition.
- 4.2 Appellant 2 requested that these auxiliary requests not be admitted into the proceedings because the respondent did not explain what amendments have been made and how they would overcome objections on file (letter of appellant 2 dated 6 March 2024, page 16, paragraph 56).

- 4.3 The Board notes that claim requests filed by a patent proprietor in reply to the notices of opposition within the time limit set under Rule 79(1) EPC are not considered to be late-filed. As a general rule, these requests would typically have been admitted by the opposition division. Not admitting these requests in appeal proceedings and thus considering them not to have been admissibly raised during opposition proceedings should be reserved for clearly exceptional situations (see T 0364/20, points 7.1.2 and 7.1.3 of the reasons).
- 4.4 In the present case, contrary to appellant 2's view, the patent proprietor has provided some reasoning explaining why the first, second and third auxiliary requests would be suitable to overcome the objection of lack of inventive step starting from D3 as the closest prior art (rejoinder to the statements of grounds of appeal, page 38, last paragraph to page 41, fourth paragraph). It is a standard and legitimate procedural step for a patent proprietor to submit amended claims with the reply to a notice of opposition in an effort to overcome objections raised therein.
- 4.5 In light of these considerations, and given that the requests were submitted in a timely and substantiated manner, the Board has no reason to hold the first to third auxiliary requests inadmissible.
5. Inventive step - first auxiliary request
- 5.1 Claim 1 of the first auxiliary request differs from granted claim 1 in that the method for recycling textile comprises the step of

"d) recovering the cellulose and using the cellulose for making new textiles or for any other purpose where cellulose is used."

- 5.2 In the context of inventive step, the relevant question for the Board is whether this additional technical feature (here step d)) is suitable for overcoming the previous finding of lack of inventive step of granted claim 1 which was based on the combination of documents D3 and D14. The same assessment will be made in relation to the second and third auxiliary requests (see points 6. and 7. of the decision).
- 5.3 According to the respondent, D3 would suggest precipitating the cellulose before producing the viscose, which would lead away from the claimed invention (rejoinder to the statements of grounds of appeal, paragraph bridging pages 38 and 39). During the oral proceedings before the Board, the respondent acknowledged that step d) did not constitute a further additional distinguishing feature between the subject-matter of operative claim 1 and the disclosure of D3.
- 5.4 In view of the fact that the new feature of operative claim 1 is not a distinguishing feature, it is not apparent to the Board how this feature can lead away from D3. Allegedly, D3 would suggest precipitating the cellulose before producing the viscose, but the respondent has not explained why this would not be covered by claim 1 of the first auxiliary request, which concerns a process comprising a certain number of steps but not excluding additional ones.
- 5.5 Consequently, the Board holds that the previous objection of lack of inventive step applies *mutatis*

mutandis to claim 1 of the first auxiliary request (point 3. above).

6. Inventive step - second auxiliary request

6.1 Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that

"the pH during step b) is in the range of 9-13.5".

6.2 It is clear from the respondent's submissions that the second auxiliary request was filed to overcome an objection of lack of inventive step based on document D1 (rejoinder to the statements of grounds of appeal, page 39, second full paragraph). However, it was not explained why this new request and in particular the choice of a pH range for step b) would be suitable to overcome the above objection of lack of inventive step based on the combination of D3 with D14.

6.3 Consequently, the Board has no reason to consider that the additional limitation introduced in claim 1 of the second auxiliary request is suitable to overcome the previous objection of lack of inventive step (points 3. and 5. above).

7. Inventive step - third auxiliary request

7.1 Claim 1 of the third auxiliary request differs from claim 1 of the second auxiliary request in that

"the at least one reducing additive comprises sodium dithionite, $\text{Na}_2\text{S}_2\text{O}_4$ ".

7.2 The respondent argued that sodium dithionite was only one of several alternatives for an optional

decolourisation step in D14 (letter dated 9 December 2024, page 10, last paragraph).

During the oral proceedings before the Board, the respondent contended that sodium dithionite was:

- particularly suitable for large scale operations since it was non toxic and easy to remove from the final product,
- an efficient reducing agent even at low temperature and
- available at reduced price.

For these reasons, it was not obvious to select this compound as reducing agent.

During the oral proceedings, the respondent acknowledged that the above listed advantages of sodium dithionite were common general knowledge.

7.3 According to appellant 2, the use of sodium dithionite as reducing agent was known from D14 and therefore obvious (letter of appellant 2 dated 6 March 2024, page 16, paragraph 60; D14, column 4, lines 32 to 38). During the oral proceedings before the Board, the appellants argued that the respondent had not demonstrated any effect linked to the choice of the reducing agent.

7.4 In that respect, the Board notes that sodium dithionite is the only reducing agent used in the examples provided by the respondent. A direct comparison with other reducing agents was not provided. Likewise, the respondent has not provided any evidence of common general knowledge with respect to the alleged advantages of sodium dithionite identified under point

7.2. In the absence of any evidence for the respondent's line of argument, the problem solved remains the one formulated for the higher ranking requests (see point 3.3.8, above) and the choice of sodium dithionite is considered to be arbitrary. In view of the fact that this reducing agent is cited as one of the two most preferred reducing agents of D14 (see column 4, lines 32 to 38), it was obvious for a skilled person to select that compound.

7.5 Even if the alleged advantages of sodium dithionite were considered to be common general knowledge, as argued by the respondent, it would likewise be obvious to select that compound based on that knowledge.

7.6 For these reasons, the subject-matter of claim 1 of the third auxiliary request lacks an inventive step starting from D3 in combination with D14.

Fourth, fifth and sixth auxiliary requests

8. Admittance

8.1 The fourth, fifth and sixth auxiliary requests were filed by the patent proprietor during opposition proceedings with their letter dated 21 December 2022.

8.2 The appellants requested that these auxiliary requests not be admitted into the proceedings because the respondent did not explain why they were late-filed, what amendments have been made and how they would overcome objections on file (statement of grounds of appeal of appellant 1, page 25, third to ninth paragraph; letter of appellant 2 dated 6 March 2024, page 16, paragraph 56).

- 8.3 The respondent argued that the fourth, fifth and sixth auxiliary requests were not late-filed because they were submitted before the final date for making written submissions set in the summons to attend oral proceedings (i.e. 23 December 2022). Furthermore, in the contested decision, the opposition division mentioned these auxiliary requests under point 7, which meant that they were implicitly admitted (rejoinder to the statements of grounds of appeal, page 38, third and fourth paragraph). At the very least, it should be acknowledged that these requests were not objected to by the opposition division. The respondent further stated that an explanation for the auxiliary requests had been provided in their rejoinder to the statements of grounds of appeal (letter dated 9 December 2024, page 10, first paragraph).
- 8.4 As a first observation, the Board notes that, although the fourth, fifth and sixth auxiliary requests were mentioned in the "summary of facts and submissions" of the contested decision, the opposition division did not address either the admittance or the merits of those requests. Therefore, contrary to the respondent's view, the fourth, fifth and sixth auxiliary requests cannot be considered implicitly admitted into the proceedings, nor can it be said that the decision was based on them within the meaning of Article 12(2) RPBA.
- 8.5 As a second observation, the fact that these auxiliary requests were filed within the time limit laid down under Rule 116 EPC does not imply that they cannot be considered to have been late-filed. In opposition proceedings, Rule 79(1) EPC allows the patent proprietor to amend the description, claims and drawings within a period set by the opposition division

with the communication of the notices of opposition. Therefore, amendments filed with the response to the notice of opposition are not considered as late-filed. Subsequent amendments (such as the present auxiliary requests) are, however, normally considered as late-filed and are admissible at the discretion of the opposition division. In other words, the opposition division could have decided not to admit these requests to the proceedings, but did not take a decision on that issue because the patent was maintained as granted.

8.6 Last but not least, reference is made to Article 12 paragraphs (2) and (4) RPBA which specify:

"(2) In view of the primary object of the appeal proceedings to review the decision under appeal in a judicial manner, a party's appeal case shall be directed to the requests, facts, objections, arguments and evidence on which the decision under appeal was based." (emphases here and below added by the Board).

(4) Any part of a party's appeal case which does not meet the requirements in paragraph 2 is to be regarded as an amendment, unless the party demonstrates that this part was admissibly raised and maintained in the proceedings leading to the decision under appeal. Any such amendment may be admitted only at the discretion of the Board.

The party shall clearly identify each amendment and provide reasons for submitting it in the appeal proceedings. In the case of an amendment to a patent application or patent, the party shall also indicate the basis for the amendment in the

application as filed and provide reasons why the amendment overcomes the objections raised."

8.7 As discussed previously, it cannot be disputed that the decision under appeal was not based on the fourth, fifth and sixth auxiliary requests (see point 8.4 above). Furthermore, the respondent did not argue that these requests were admissibly filed during opposition proceedings (but merely that they were implicitly admitted which was not convincing). It follows that the fourth, fifth and sixth auxiliary requests can be seen as an amendment of the respondent's case, the admittance of which is subject to the discretion of the Board under Article 12(4) RPBA.

8.8 In agreement with the appellants, during the appeal proceedings, the respondent has neither indicated the basis for the amendments nor given any reason for submitting them in the appeal proceedings. In addition, very limited submissions were made as to how the amendments overcome the objections raised, in particular no or minimal submissions with respect of inventive step over D3 as the closest prior art. In these circumstances, the Board sees no reason to admit the fourth to sixth auxiliary requests into the appeal proceedings (Article 12(4) RPBA).

Seventh to thirteenth auxiliary requests

9. Admittance

9.1.1 The seventh to thirteenth auxiliary requests are new sets of claims, filed by the respondent with letter of 7 March 2025 and therefore after notification of the Board's communication under Article 15(1) RPBA. Their

admission to the proceedings, which is contested by the appellants, is subject to the provisions of Articles 12(4)-(6), 13(1) and 13(2) RPBA.

- 9.1.2 In these requests, the respondent limited the scope of the claims to processes wherein the bleaching step was carried out under acid conditions (below pH 6) and in the presence of ozone (corresponding to step c.ii of granted claim 1). The alternative bleaching step c.i (alkaline oxygen bleaching) was therefore deleted.
- 9.1.3 The respondent argued that these requests were filed in reaction to a new allegation of fact submitted by appellant 2 in their letter dated 6 March 2024 (page 4, paragraph 13), which stated that the reactivity of the species present during bleaching was strongly pH-dependent (letter dated 7 March 2025, page 3, second to fourth paragraphs; letter dated 20 May 2025, page 2, third paragraph to page 4, second paragraph). The respondent also argued that these requests could not have been filed at an earlier stage due to an interruption of the proceedings from 26 February 2024 to 2 December 2024 owing to bankruptcy proceedings opened against the then patent proprietor. Failing to admit these requests into the proceedings would infringe the respondent's right to be heard and constitute a substantial procedural violation (letter dated 20 May 2025, page 5, "Implications").
- 9.1.4 The appellants requested that the seventh to thirteenth auxiliary requests not be admitted into the appeal proceedings. From the onset of the opposition proceedings it had been argued that no technical effect had been made credible for the alkaline bleaching step c.i. as defined in granted claim 1. Therefore, there was no reason, let alone exceptional circumstances,

justifying the submission of further requests at this very late stage of the proceedings (letter of appellant 2 dated 26 May 2025, bridging paragraph between pages 1 and 2). In addition, the appellants held that the respondent had sufficient time to file these requests before the Board's communication under Article 15(1) RPBA despite the interruption of proceedings owing to the bankruptcy.

- 9.1.5 In the Board's view, the reasons for not admitting these auxiliary requests are essentially the same as those for not admitting the late-filed references 2, 3 6 and 7 (see points 2.3.4 to 2.3.7 of the reasons). These reasons are repeated below for the sake of clarity.
- 9.1.6 The Board agrees with the appellants that a central point of dispute between the parties was whether a technical problem had been solved by the claimed invention in comparison to the disclosure of D3 taken as the closest prior art. In that regard, it was the contention of appellant 2 from the onset of the opposition proceedings that it had not been demonstrated that any effect was obtained if the cellulose material was treated by an oxygen bleaching step under alkaline conditions (notice of opposition of opponent 2, page 12, point 4.5 and statement of grounds of appeal of appellant 2, page 3, point 8). In the Board's view, the seventh to thirteenth auxiliary requests directly address the criticism of appellant 2 by deleting from the claims the oxygen bleaching step under alkaline conditions (step c.i. of claim 1). In so far as the objection of appellant 2 was present from the beginning of the opposition proceedings, the Board considers that the seventh to thirteenth auxiliary requests should also have been filed during opposition

proceedings. For that reason, these requests should not be admitted already under Article 12(6), second sentence RPBA.

9.1.7 The respondent argued that the seventh to thirteenth auxiliary requests were filed in reaction to a new allegation of fact submitted by appellant 2 in their letter dated 6 March 2024 (page 4, paragraph 13), which stated that the reactivity of the species present during bleaching was strongly pH-dependent. While this statement may not have been expressed explicitly in the appellants' previous submissions, it had been argued in appellant 2's statement of grounds of appeal that alkaline oxygen bleaching could not, in the absence of supporting data, be expected to have the same effect as acidic ozone bleaching (see page 3, point 8). The Board considers the additional statement that the pH affects the reactivity of the relevant species, and therefore the yield, to be merely a developing argument within the framework of the appellants' initial contention. In addition, the Board does not consider this statement to be relevant to the decision, nor to have the potential to tip the case in favour of the appellants. For these reasons, the presence of an additional statement in the framework of the previous submissions cannot be considered an exceptional circumstance that would justify admitting the seventh to thirteenth auxiliary requests into the proceedings (Article 13(2) RPBA).

9.1.8 Last but not least, these requests were filed on 7 March 2025 i.e. about one year after appellant 2's new statement (submitted on 6 March 2024) and one month after the Board's communication under Article 15(1) RPBA (dated 6 February 2025). Although it is true that the proceedings were interrupted for the respondent from 26 February 2024 to 2 December 2024, the Board

considers that there was still sufficient time to file new requests before the Board's communication (in particular with the respondent's letter dated 19 December 2024). Taking all these considerations into account, the Board cannot identify any exceptional circumstances that would justify filing these requests after the Board's communication.

- 9.1.9 Under these circumstances, the Board finds it appropriate to exercise its discretion under Articles 12(6) and 13(2) RPBA by not admitting the seventh to thirteenth auxiliary requests into the proceedings.
10. As none of the respondent's requests is either allowable or admissible, the patent is to be revoked.

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:



D. Hampe

D. Semino

Decision electronically authenticated