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**Datasheet for the decision  
of 24 January 2025**

**Case Number:** T 1587/23 - 3.3.03

**Application Number:** 17848102.4

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C08G63/181, C08G63/78

**Language of the proceedings:** EN

**Title of invention:**

POLYESTER TEREPHTHALATE-CO-SEBATE RESIN AND PREPARATION METHOD  
THEREFOR

**Patent Proprietors:**

Zhuhai Wango Chemical Co., Ltd.  
Kingfa Sci. & Tech. Co., Ltd.  
Shanghai Kingfa Sci.&Tech.Co., Ltd.

**Opponents:**

NOVAMONT SPA  
BASF SE

**Relevant legal provisions:**

EPC Art. 56, 113(1)  
EPC R. 115(2)

**Keyword:**

Summons to oral proceedings - continuation of proceedings  
without duly summoned party - right to be heard  
Applicability of prohibition of reformatio in peius - main  
request and auxiliary requests I-VII, VIa, VIIa and IX (yes)  
Inventive step - auxiliary request VIII - improvement not  
credible - obvious modification

**Decisions cited:**

G 0001/92, G 0004/93, G 0001/99, T 0341/92



**Beschwerdekammern**

**Boards of Appeal**

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**Case Number: T 1587/23 - 3.3.03**

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.03**  
**of 24 January 2025**

**Appellant:**  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
27 June 2023 concerning maintenance of the  
European Patent No. 3511358 in amended form.**

**Composition of the Board:**

**Chairman** D. Semino  
**Members:** M. Barrère  
M. Millet

## Summary of Facts and Submissions

- I. The appeal of opponent 1 lies from the interlocutory decision of the opposition division concerning maintenance of European Patent No. 3 511 358 in amended form on the basis of the claims of auxiliary request VIII filed with letter of 20 April 2023 and an adapted description. The contested decision was also based on the patent as granted as the main request and auxiliary request I to VII filed with letter of 20 April 2023.
- II. The main request included a product claim (granted claim 1) and a method claim (granted claim 6) which read as follows:

"1. A poly(terephthalate-co-sebacate) resin, characterized in that, a structure of the poly(terephthalate-co-sebacate) resin satisfies a relation as follows:

$$\frac{S_{\delta} \text{ hydrogen on conjugated carbon chain}}{S_{\delta} \text{ hydrogen on saturated carbon chain 1.2-2.4}} = 0.1 \text{ to } 0.35$$

wherein said  $S_{\delta}$  hydrogen on conjugated carbon chain is a total area of a peak integration of hydrogen on a conjugated carbon chain in a  $^1\text{H}$  NMR spectra, and said  $S_{\delta}$  hydrogen on saturated carbon chain 1.2-2.4 is a total area of a peak integration of hydrogen on a saturated carbon chain and with a chemical shift between 1.2-2.4 ppm in the  $^1\text{H}$  NMR spectra, wherein a testing method of the  $^1\text{H}$  NMR spectra is: after dissolving a sample with chloroform-d, carrying out a test at room temperature of 25°C using a German

Bruker DRX-400 nuclear magnetic resonance spectrometer."

"6. A preparation method of the poly(terephthalate-co-sebacate) resin according to any of claims 1 to 4, characterized in that, the preparation method comprises following steps:

(1) under an atmosphere of high purity nitrogen, putting metric sebacic acid and 1,4-butanediol into a reactor, increasing a temperature to 160-180°C for reacting for 20-40 minutes;

(2) putting terephthalic acid into the reactor, adding tetra-(2-ethylhexyl)titanate, increasing the temperature to 200-220°C for reacting for 1-2 hours, wherein an addition amount of terephthalic acid accounts for 40-60 wt% of a total amount of terephthalic acid, and an addition amount of tetra-(2-ethylhexyl)titanate accounts for 20-30 wt% of a total amount of tetra-(2-ethylhexyl)titanate;

(3) putting the rest of terephthalic acid into the reactor, adding tetra-(2-ethylhexyl)titanate that accounts for 20-30 wt% of the total amount of tetra-(2-ethylhexyl)titanate, increasing the temperature to 220-230°C for reacting for 2-3 hours;

(4) then adding the rest of tetra-(2-ethylhexyl)titanate, vacuumizing the reactor to have an internal pressure of 100 Pa or less in 2 hours, reacting at 230-260°C for 2-4 hours, stopping stirring, filling the reactor with high purity nitrogen, and extruding a resin from the

reactor and pelletizing the resin to obtain the poly(terephthalate-co-sebacate) resin."

Auxiliary requests I to VII included more limited versions of the product claim (corresponding to claim 1 as granted) and of the method claim (corresponding to claim 6 as granted).

The set of claims of auxiliary request VIII was limited to method claims directed to the preparation of a poly(terephthalate-co-sebacate) resin. Claim 1 of that request read as follows:

"1. A preparation method of the poly(terephthalate-co-sebacate) resin, characterized in that, the preparation method comprises following steps:

(1) under an atmosphere of high purity nitrogen, putting metric sebacic acid and 1,4-butanediol into a reactor, increasing a temperature to 160-180°C for reacting for 20-40 minutes;

(2) putting terephthalic acid into the reactor, adding tetra-(2-ethylhexyl)titanate, increasing the temperature to 200-220°C for reacting for 1-2 hours, wherein an addition amount of terephthalic acid accounts for 40-60 wt% of a total amount of terephthalic acid, and an addition amount of tetra-(2-ethylhexyl)titanate accounts for 20-30 wt% of a total amount of tetra-(2-ethylhexyl)titanate;

(3) putting the rest of terephthalic acid into the reactor, adding tetra-(2-ethylhexyl)titanate that accounts for 20-30 wt% of the total amount of tetra-(2-ethylhexyl)titanate, increasing the

temperature to 220-230°C for reacting for 2-3 hours;

(4) then adding the rest of tetra-(2-ethylhexyl)titanate, vacuumizing the reactor to have an internal pressure of 100 Pa or less in 2 hours, reacting at 230-260°C for 2-4 hours, stopping stirring, filling the reactor with high purity nitrogen, and extruding a resin from the reactor and pelletizing the resin to obtain the poly(terephthalate-co-sebacate) resin

wherein a structure of the poly(terephthalate-co-sebacate) resin satisfies a relation as follows:

$$\frac{S_{\delta} \text{ hydrogen on conjugated carbon chain}}{S_{\delta} \text{ hydrogen on saturated carbon chain 1.2-2.4}} = 0.1 \text{ to } 0.35$$

wherein said  $S_{\delta}$  hydrogen on conjugated carbon chain is a total area of a peak integration of hydrogen on a conjugated carbon chain in a  $^1\text{H}$  NMR spectra, and said  $S_{\delta}$  hydrogen on saturated carbon chain 1.2-2.4 is a total area of a peak integration of hydrogen on a saturated carbon chain and with a chemical shift between 1.2-2.4 ppm in the  $^1\text{H}$  NMR spectra, wherein a testing method of the  $^1\text{H}$  NMR spectra is: after dissolving a sample with chloroform-d, carrying out a test at room temperature of 25°C using a German Bruker DRX-400 nuclear magnetic resonance spectrometer."

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

III. The following documents were *inter alia* cited in the decision under appeal:



D1: WO 2006/097353 A1

D2: Experimental report "Reproduction of Example 1 of WO 2006/097353 A1", dated 26 October 2021

D3: EP 2 881 415 A1

D9: WO 2010/034710 A1

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 was not novel in view of each of documents D1 and D9. The same conclusion applied to claim 1 of auxiliary requests I to VII in view of documents D1 and/or D9.
- The subject-matter of claim 1 of auxiliary request VIII involved an inventive step over document D1 taken as the closest prior art.

V. Opponent 1 (the appellant) lodged an appeal against that decision.

VI. Although opponent 2 (party as of right) initially filed a notice of appeal, they withdrew their appeal by letter dated 6 October 2023 and did not further participate in the appeal proceedings.

VII. The patent proprietors initially lodged an appeal against the contested decision. With the statement setting out the grounds of appeal, they filed nine sets of amended claims as auxiliary requests I to IX.

VIII. With their rejoinder to the statement of grounds of appeal of opponent 1, the patent proprietors filed two additional sets of amended claims as auxiliary requests VIa and VIIa.

- IX. The parties were summoned to oral proceedings and a communication under Article 15(1) RPBA was subsequently issued, setting out the preliminary views of the Board on the issues relevant to the present case.
- X. By letter of 11 October 2024, the patent proprietors withdrew their appeal. They are therefore parties as of right within the meaning of Article 107 EPC, second sentence, as respondents to the appeal of opponent 1.
- XI. By letter dated 17 January 2025, the respondents informed the Board that they would not attend the oral proceedings but maintained their requests submitted in writing.
- XII. Oral proceedings took place on 24 January 2025 in the presence of the appellant but in the absence of the respondents and the party as of right (opponent 2).
- XIII. The requests of the parties were as follows:

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

The respondents requested in writing that the decision under appeal be set aside and the patent be maintained as granted (main request). In the alternative maintenance of the patent in amended form on the basis of one of auxiliary requests I to VI, VIa, VII, VIIa, VIII and IX was requested, whereby

auxiliary requests I to IX were filed with their statement of grounds of appeal and

auxiliary requests VIa and VIIa were filed with their rejoinder to the statement of grounds of appeal of the appellant.

XIV. The main request and auxiliary requests I to VIII were identical to the requests dealt with the decision under appeal (for the wording of the relevant claims, reference is made to point II.).

Auxiliary requests VIa and VIIa included more limited versions of a product claim (corresponding to claim 1 as granted) and of a method claim (corresponding to claim 6 as granted).

Claim 1 of auxiliary request IX read as follows:

"1. Use of a poly(terephthalate-co-sebacate) resin, characterized in that, a structure of the poly(terephthalate-co-sebacate) resin satisfies a relation as follows:

$$S_{\delta} \text{ hydrogen on conjugated carbon chain} / S_{\delta} \text{ hydrogen on saturated carbon chain } 1.2-2.4 = 0.18 \text{ to } 0.22$$

wherein said  $S_{\delta}$  hydrogen on conjugated carbon chain is a total area of a peak integration of hydrogen on a conjugated carbon chain in a  $^1\text{H}$  NMR spectra, and said  $S_{\delta}$  hydrogen on saturated carbon chain 1.2-2.4 is a total area of a peak integration of hydrogen on a saturated carbon chain and with a chemical shift between 1.2-2.4 ppm in the  $^1\text{H}$  NMR spectra, wherein a testing method of the  $^1\text{H}$  NMR spectra is: after dissolving a sample with chloroform-d, carrying out a test at room temperature of 25°C using a German Bruker DRX-400 nuclear magnetic resonance spectrometer for making a film having a water vapor

transmission of 100 to 1500 g/m<sup>2</sup>/d at a thickness of 25±1 µm determined according to ASTM E96."

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

- XV. 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 admittance of the main request and auxiliary requests I to VI, VIa, VII, VIIa and IX as well as the inventive step of claim 1 of auxiliary request VIII over D1 as the closest prior art.

## Reasons for the Decision

1. Non-attendance of the respondents at oral proceedings and right to be heard
  - 1.1 According to Rule 115(2) EPC, the proceedings may continue without a duly summoned but non-attending party. Although the non-attending party's right to be heard under Article 113(1) EPC must not be ignored, it is possible to base a decision on a ground discussed for the first time during oral proceedings, at least if the stage reached in the case was such that the absent party could have expected the question to be discussed and were aware of the actual basis on which it would be judged (T 341/92, headnote).
  - 1.2 In the present case, the patent proprietors withdrew their appeal by letter dated 11 October 2024. Subsequently, by letter dated 17 January 2025 (one week before the oral proceedings), they informed the Board of their absence at the oral proceedings but maintained their requests submitted in writing.
  - 1.3 As a result of the withdrawal of their appeal, the patent proprietors became parties as of right. In addition opponent 1 became the sole appellant and the principle of the prohibition of *reformatio in peius* began to apply, meaning that the patent proprietors were in principle limited to defending the opposed patent in the form in which it had been maintained by the opposition division, i.e. auxiliary request VIII.

1.4 In the Board's view, by withdrawing their appeal, the patent proprietors could have expected that the procedural situation would be reassessed by the Board even in their absence, that the principle of the prohibition of *reformatio in peius* would be evaluated and that the admittance of the claim requests would be assessed in the light of that principle. Consequently, a decision based on this principle can be taken even if that matter was discussed for the first time during the oral proceedings in the absence of the patent proprietors.

**Main request (patent as granted) and auxiliary requests I to VI, VIa, VII, VIIa**

2. Compliance with the prohibition of *reformatio in peius*

2.1 According to established case law (see decisions G 9/92 and G 4/93 confirmed in G 1/99; Case Law of the Boards of Appeal, 10<sup>th</sup> edition 2022, hereinafter referred to as "Case Law", V.A.3.1), a Board cannot place a sole appellant in a worse position than if there had been no appeal against a first instance decision (prohibition of *reformatio in peius*).

2.2 In application of that principle, if an opponent is the sole appellant against an interlocutory decision maintaining a patent in amended form, the patent proprietor is primarily restricted during the appeal proceedings to defending the patent in the form in which it was maintained by the opposition division in its interlocutory decision. Amendments proposed by the patent proprietor as respondent may be rejected as inadmissible by the Board if they contravene this principle.

- 2.3 In the present case, the opposed patent was maintained by the opposition division on the basis of auxiliary request VIII. This request included only method claims but no product or use claims (reference is made to point II. for the wording of claim 1 of auxiliary request VIII). In application of the prohibition of *reformatio in peius*, the patent proprietors as non appealing parties are therefore primarily limited to defending the patent in the form of auxiliary request VIII or a more limited version thereof.
- 2.4 Before withdrawing their appeal, the patent proprietors requested in writing that the contested decision be set aside and the patent be maintained as granted (main request) or in amended form on the basis of one of auxiliary requests I to VI, VIa, VII, VIIa, VIII and IX. As noted by the appellant during the oral proceedings, the main request and auxiliary requests I to VI, VIa, VII and VIIa include product claims as well as method claims (see point II. above). The scope of these requests therefore covers a product (polyester resin) which was entirely absent in auxiliary request VIII. Maintaining the opposed patent on the basis of any one of the higher ranking requests would clearly place opponent 1, as sole appellant, in a worse position than if they had not filed an appeal. Consequently, the main request (patent as granted) as well as auxiliary requests I to VI, VIa, VII and VIIa manifestly infringe the principle of prohibition of *reformatio in peius*.
- 2.5 With the withdrawal of the appeal and in the absence of further explanation from the patent proprietors, the Board considers the patent proprietors were automatically limited to defending auxiliary request VIII, which implies that the main request and auxiliary

requests I to VI, VIa, VII and VIIa, which manifestly infringe the principle of prohibition of *reformatio in peius* and are on this basis inadmissible, can be considered to be withdrawn.

**Auxiliary request VIII (patent as maintained by the opposition division)**

3. Inventive step

3.1 Claim 1 of auxiliary request VIII is directed to a preparation method of a poly(terephthalate-co-sebacate) resin (reference is made to point II. above for the exact wording of that claim).

3.2 In the decision under appeal, the opposition division found that claim 1 involved an inventive step over document D1 taken as the closest prior art. This conclusion is contested by the appellant (statement of grounds of appeal of opponent 1, pages 9 to 18, section D.).

3.3 Closest prior art and distinguishing features

3.3.1 The parties agreed with the opposition division that:

- document D1 could be chosen as the closest prior art and
- the subject-matter of present claim 1 differed from example 1 of D1 at least in that:

- (i) tetra-(2-ethylhexyl)titanate was used as the esterification catalyst (instead of butylstannoic acid) and



- (ii) the esterification catalyst and terephthalic acid as one of the monomers were added incrementally (instead of a one-step addition).

The Board has no reason to depart from that view (see statement of grounds of appeal of opponent 1, page 9, paragraphs 38 and 39; rejoinder of the respondents, page 5, third and fourth paragraphs).

- 3.3.2 In the context of the higher ranking requests, the respondents argued that D1 did not disclose a poly(terephthalate-co-sebacate) resin, characterised by a structure of the resin satisfying the following ratio:

$$\frac{S_{\delta} \text{ hydrogen on conjugated carbon chain}}{S_{\delta} \text{ hydrogen on saturated carbon chain}} 1.2-2.4 = 0.1 \text{ to } 0.35$$

Therefore, this ratio (in the following "peak ratio") constituted a further distinguishing feature between operative claim 1 and example 1 of D1 (statement of grounds of appeal of the patent proprietors, page 5, penultimate paragraph to page 10, penultimate paragraph; rejoinder of the patent proprietors, pages 2 to 4, section II.-1).

- 3.3.3 In the contested decision (pages 4 to 9, section 2.2.2), the opposition division found that the peak ratio could be either calculated based on the monomer composition of the poly(terephthalate-co-sebacate) resin or measured. In both cases the peak ratio was anticipated by example 1 of D1 (alone or in view of the experimental data in D2) which disclosed a polybutylene(terephthalate-co-sebacate) (PBSeT)

characterised by calculated peak ratio of 0.19 or a measured peak ratio of 0.18.

3.3.4 The respondents contested these findings for the following reasons:

- (a) The peak ratio according to the opposed patent was influenced by various factors beyond just the monomer content, such as polymerisation, molecular structure, entanglement, and water content, which could significantly affect the experimental results. The opposition division oversimplified the relationship between monomer content and the peak ratio, assuming that the differences between calculated and experimental values would fall within an insignificant margin of error (0.02 points). Instead, such deviations might have been significant and were not necessarily within an experimental error margin, especially in high-precision techniques like NMR.
- (b) Moreover, the differences in experimental conditions between example 1 of D1 and its replication in D2, such as the time for water distillation and pressure reduction, could have led to variations in the PBSeT resin structure and water content, affecting the final product (statement of grounds of appeal of the patent proprietors, page 8, table). Since the prior art (D1) needed to clearly and unambiguously disclose the claimed invention to destroy novelty, the opposition division erred by assuming these differences were insignificant without proper evidence. Therefore, the peak ratio constituted a further distinguishing feature between operative claim 1 and example 1 of D1.

3.3.5 In the present situation, the Board agrees with the appellant and the opposition division for the following reasons (rejoinder of opponent 1, pages 5 to 16, point C.I.):

(a) It is first acknowledged that a prior art document anticipates the novelty of a claimed subject-matter if the latter is directly and unambiguously derivable from that document, including any features implicit to a person skilled in the art (Case Law, I.C.4.3). Furthermore, in *inter partes* proceedings, the burden of proving an alleged lack of novelty initially lies with the opponents (Case Law, III.G.5.1.1). However, it is also pointed out that once the opponents submitted conclusive proof of their allegations, they have complied with the requirement of the burden of proof. In that case, the patent proprietors seeking to refute the conclusively established facts by way of counter-arguments bears the burden of proving their alleged facts (Case Law, III.G.5.2.1).

(b) In the present case, the Board notes that the opposition division and the appellant have provided a formula allowing to calculate the peak ratio on the basis of the monomeric composition of a PBSeT copolymer (contested decision, pages 4 to 6, section 2.2.2.1 and statement of grounds of appeal of the opponent 1, page 3, paragraph 9 to page 5, paragraph 18). In addition, using that formula, it was shown that the calculated peak ratio of examples 2 and 8 of the opposed patent corresponded to the measured peak ratio (contested decision, pages 5, third paragraph to page 6, fourth paragraph). The Board considers that the

calculation method put forward by the opposition division and the appellant is both theoretically correct and confirmed by experimental evidence. Based on this method, the appellant calculated that the peak ratio of the PBSeT of example 1 of D1 should be 0.19 corresponding to a peak ratio of 0.1 to 0.35 as defined in operative claim 1 (rejoinder of opponent 1, page 9, paragraph 43).

- (c) Hence, in the Board's view, the appellant provided conclusive proof that the required peak ratio as defined in claim 1 of auxiliary request VIII was anticipated by example 1 of D1. In that situation, the burden of proof is therefore shifted to the patent proprietors to provide evidence for their allegation that the formula put forward by the appellant cannot be used to estimate the peak ratio. However, no evidence was provided to show that the calculation method was incorrect. In particular, the argument that the peak ratio can be influenced by

*"many factors such as the degree of monomer self-polymerization, changes in the sequence structure of the molecular chain, the degree of entanglement, the crystal structure and the water content in the PBSeT resin"* (statement of grounds of appeal of the patent proprietors, page 6, first paragraph)

is not supported by experimental data or proof of common general knowledge.

As a matter of example, the respondents pointed out that butanediol can undergo a side reaction leading to the formation polytetrahydrofuran (PTMEG).

However, even in that case, the peak from hydrogen on saturated carbon in beta position of the oxygen remains within the range of 1.2-2.4 (statement of grounds of appeal of the patent proprietors, page 6, figure 1; rejoinder of opponent 1, page 10, paragraph 47). In other words, the calculated peak ratio is not affected by the condensation of butanediol.

(d) Last but not least, even if it were accepted that the calculated peak ratio and the measured peak ratio can differ by 0.02 points (as argued by the respondents), it is pointed out that the calculated peak ratio of example 1 of D1 is 0.19, which is far away from the limits of the range (0.1 to 0.35). In any event, the respondents have not provided any evidence that the peak ratio for a given monomer composition could vary so much as to be outside the range defined in operative claim 1.

3.3.6 Therefore, based on the submissions of the respondents, the Board has no reason to overturn the decision of the opposition division that the peak ratio can be calculated based on the monomer composition and that, on this basis, the peak ratio of the resin of example 1 of D1 is within the range defined in operative claim 1.

3.3.7 In reaching this first conclusion, the Board did not need to consider the measured peak ratio of example 1 of D1 provided by the appellant in document D2. However, the measured ratio of 0.18 only confirms that first conclusion (D2, page 7, table 1). In that respect, it is also noted that the criticisms of the respondents pointing at differences in experimental conditions between D1 and D2 is also not supported by evidence that these differences would have any impact

on the peak ratio. As noted above, it is considered that the peak ratio is essentially dependent on the monomer composition. Hence, in the absence of proof of the contrary, it is not credible that the differences identified by the respondents have any meaningful impact on the peak ratio or other properties of the PBSeT (statement of grounds of appeal of the patent proprietors, page 8, table).

3.3.8 Therefore, also on the basis of the experimental evidence provided in document D2, the Board finds that the peak ratio is not a feature distinguishing the subject matter of operative claim 1 from example 1 of D1. Consequently, the only distinguishing features are those identified under point 3.3.1 above.

3.4 Objective problem to be solved

3.4.1 According to the respondents (rejoinder, page 5, last paragraph to page 6, first paragraph), the objective problem to be solved over D1 may be seen as the provision of an improved process for producing aliphatic-aromatic polyester resins. Specifically, the process of the opposed patent would allow for effective control of the peak ratio, which in turn would allow adjustment of the water vapour transmission properties.

3.4.2 As regards the definition of the problem to be solved, the Board agrees with the appellant for the following reasons (statement of grounds of appeal of opponent 1, page 10, paragraph 40 to page 14, paragraph 64):

(a) The definition of the problem to be solved put forward by the respondents is based on a comparison of examples 7 and 8 with comparative examples 1 and 2 of the opposed patent. While the polymerisation

process in examples 7 and 8 is carried out in multiple steps as defined in operative claim 1, the process in the comparative examples is carried out in one step as far as the addition of the terephthalic acid (TPA) and the catalyst is concerned.

- (b) It can also be derived from table 1 of the opposed patent that the moisture permeability of the PBSeT resin is decreased in the case of comparative example 1 (vs. example 7) and increased in the case of comparative example 2 (vs. example 8). For this reason alone, a clear effect on the water permeability cannot be recognised on the basis of these examples (since no clear trend can be identified). Furthermore, as noted by the appellant (statement of grounds of appeal of opponent 1, page 10, paragraph 40), example 1 of D1 discloses a process leading to a PBSeT with a peak ratio as defined in operative claim 1. Therefore, comparative examples 1 and 2 of the opposed patent, which disclose a process for the synthesis of PBSeT with a peak ratio outside the range defined in claim 1, cannot be considered as representative of D1 as the closest prior art (i.e. the comparison is not the correct one).
- (c) For these reasons, in the absence of evidence of a technical effect over the process of example 1 of D1, it cannot be concluded that the process of present claim 1 is advantageous.
- (d) Moreover, in agreement with the appellant, in view of fact that the addition of TPA and the catalyst in example 1 of D1 is carried out in one step (instead of several steps in operative claim 1),

the process of D1 can be considered to be less complex (statement of grounds of appeal of opponent 1, page 14, paragraphs 63 and 64).

- 3.4.3 The respondents further argued that the claimed process allowed control of the sequence length and sequence randomness of the repeat units in the macromolecular chain in a way that could not be achieved if all reactants were added at once (rejoinder, page 7, second paragraph). However, as noted above, the alleged differences of the copolymer structure are not supported by evidence and, therefore, cannot be taken into account by the Board.
- 3.4.4 Consequently, in the absence of evidence of a technical effect, the Board considers that the process of operative claim 1 is merely an alternative, more complex process than that of example 1 of D1.
- 3.5 Obviousness of the claimed solution
- 3.5.1 It remains to be evaluated whether it was obvious to the skilled person wishing to find an alternative (possibly more complex) process, to use a catalyst as defined in operative claim 1 and to add TPA and the said catalyst in multiple portions.
- 3.5.2 As regards the use of tetra-(2-ethylhexyl)titanate as a polyesterification catalyst (distinguishing feature (i)), it is not disputed that this feature is known from D3 (paragraph [0056]). In the absence of evidence that this catalyst has any effect compared to the catalyst used in example 1 of D1, the Board considers that it was obvious for a skilled person to replace the catalyst of D1 by an equivalent polyesterification catalyst such as tetra-(2-ethylhexyl)titanate.



3.5.3 As to the addition of TPA and the catalyst in multiple steps (distinguishing feature (ii)), the Board agrees with the appellant that it only complicates the process of example 1 of D1. However, any arbitrary modification of a process leading to a complication cannot justify an inventive step (Case Law, I.D.9.21.1). It is in particular an obvious option for a skilled person to arbitrarily add any of the necessary components in a reaction mixture in multiple portions rather than in one step when the effect of that addition is merely to complicate the process of the prior art.

3.6 For these reasons, the subject-matter of claim 1 of auxiliary request VIII does not involve an inventive step over D1 as the closest prior art.

#### **Auxiliary request IX**

4. Compliance with the prohibition of *reformatio in peius*

4.1 The opposed patent was maintained by the opposition division on the basis of auxiliary request VIII. As noted previously (see point 2.3), this request is limited to method claims, specifically the preparation method of a poly(terephthalate-co-sebacate) resin including specific process steps.

4.2 As pointed out by the appellant at the oral proceedings, claim 1 of auxiliary request IX is directed to the use of a poly(terephthalate-co-sebacate) resin which is not limited by any preparation method (for the exact wording of that claim, reference is made to point XIV. above). Thus, auxiliary request IX covers the use of a specific poly(terephthalate-co-sebacate) irrespective of its method of preparation and

thus extends the protection conferred by auxiliary request VIII (which was limited to a specific method of preparation). It follows that maintaining the opposed patent on the basis of auxiliary request IX would place the appellant in a worse position than if there had been no appeal against the first instance decision (contrary to the principle of prohibition of *reformatio in peius*). It is furthermore not apparent that the filing of auxiliary request IX should be treated as an exception to this principle such as the one mentioned in decision G1/99 (see headnote).

- 4.3 For these reasons, auxiliary request IX is rejected as inadmissible.
  
5. As none of the respondents' requests is either admissible or allowable, 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