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**Datasheet for the decision
of 16 December 2024**

Case Number: T 1563/21 - 3.3.10

Application Number: 15173457.1

Publication Number: 2952500

IPC: C07C17/389, C07C17/20,
C07C17/25, C07C17/383

Language of the proceedings: EN

Title of invention:

PROCESS FOR PURIFYING (HYDRO) FLUOROALKENES

Patent Proprietor:

Mexichem Fluor S.A. de C.V.

Opponent:

The Chemours Company FC, LLC

Headword:

Relevant legal provisions:

EPC Art. 76(1), 83, 84, 100(b), 114(2), 123(3)

EPC R. 103(4)(c), 116(1)

RPBA 2020 Art. 12(6)

Keyword:

Main request, auxiliary requests 2A, 2B - Sufficiency of disclosure - (no)

Auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C, 3D - not admitted

Stated non-appearance at summoned oral proceedings treated as withdrawal of request for oral proceedings

Reimbursement of appeal fee at 25% (yes)

Decisions cited:

T 0789/89, T 0629/90, T 0073/17, T 0515/17, T 0104/23

Catchword:



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Case Number: T 1563/21 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 16 December 2024

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 1 July 2021
revoking European patent No. 2952500 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman P. Gryczka
Members: A. Zellner
T. Bokor

Summary of Facts and Submissions

- I. The patent proprietor lodged an appeal against the decision of the opposition division to revoke the European patent No. 2 952 500 (Article 101(3) (b) EPC).
- II. Notice of opposition has been filed on the basis of Article 100(a) EPC for lack of novelty and lack of inventive step (Articles 54 and 56 EPC), Article 100(b) EPC for insufficiency of disclosure, and Article 100(c) EPC for added subject-matter.
- III. Reference is made to the following documents:
- D12: Experimental report on the ability of adsorbents to remove (hydro)fluoroalkene impurities from R-1234yf, filed on 29 July 2020
- D15: experimental data filed in proceedings in relation to EP 3 159 328, filed on 24 April 2020
- D19: Declaration of Dr. Xuehui Sun, filed on 3 March 2022
- IV. In the appealed decision, the opposition division held that the patent proprietor's main request (patent as granted) was not allowable, because it did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC). The division decided not to admit auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C and 3D into the proceedings (Rule 116 EPC). Auxiliary requests 2A and 2B were admitted into the proceedings, but the division considered claim 1 of these requests to contain subject-matter which extended beyond the content of the earlier application as filed (Article 76(1) EPC). Documents D12 and D14 were

admitted into the proceedings.

- V. The appellant argued that the opposition division erred in all aspects of their decision.
- VI. After submission of its reply to the appellant's statement setting out the grounds of appeal the opponent withdrew its opposition on 7 September 2023.
- VII. In a communication under Article 15(1) RPBA dated 1 February 2024 the board informed the appellant about its preliminary opinion that the main request was not allowable under Article 100(b) EPC, that it did not intend to admit auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C and 3D into the proceedings (Article 12(6) RPBA), that auxiliary requests 2A and 2B did not meet the requirements of Articles 76(1) and 83 EPC, and that the appeal was likely to be dismissed.
- VIII. The appellant informed the board on 20 February 2024 that it will not attend oral proceedings scheduled for 11 April 2024 and requested a decision based on the written proceedings. The Board subsequently cancelled the oral proceedings on 23 February 2024.
- IX. Claim 1 of the **main request** (patent as granted) has the following wording:

"A process for removing one or more undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent, activated carbon, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene

compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

- X. Claim 1 of the auxiliary requests have the following wordings:

Auxiliary request **1**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds, wherein the undesired (hydro)fluoroalkene is R-1225zc, R-1225ye, F₂C=CF₂H, or a (hydro)fluoroalkene containing a =CF₂ moiety, from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent, activated carbon, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

Auxiliary request **1A**:

"A process for removing an undesired (hydro)fluoroalkene compound, wherein the undesired (hydro)fluoroalkene is R-1225zc, from a composition comprising the undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent, activated carbon, or a mixture thereof, wherein the undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and the undesired (hydro)fluoroalkene compound."

Auxiliary request **1B**:

"A process for removing an undesired (hydro)fluoroalkene compound, wherein the undesired (hydro)fluoroalkene is R-1225zc, from a composition comprising the undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent which is an alumina or alumina-containing substrate, activated carbon, or a mixture thereof, wherein the undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and the undesired (hydro)fluoroalkene compound."

Auxiliary request **2**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent, activated carbon, doped with a base, such as either potassium hydroxide or carbonate, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

Auxiliary request **2A**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-

tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent having a basic functionality, activated carbon impregnated with a base, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

Auxiliary request **2B**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent having a basic functionality, activated carbon impregnated with an alkali metal salt, which is a base, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

Auxiliary request **2AA**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent having an acidic or basic functionality, activated carbon impregnated with a base, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of

from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

Auxiliary request **3**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds, wherein the undesired (hydro)fluoroalkene is R-1225zc, R-1225ye, F₂C=CF₂H, or a (hydro)fluoroalkene containing a =CF₂ moiety, from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent, activated carbon, doped with a base, such as either potassium hydroxide or carbonate, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

Auxiliary request **3A**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds, wherein the undesired (hydro)fluoroalkene is R-1225zc, R-1225ye, F₂C=CF₂H, or a (hydro)fluoroalkene containing a =CF₂ moiety, from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent having a basic functionality, activated carbon impregnated with a base, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene

compounds."

Auxiliary request **3B**:

"A process for removing one or more undesired (hydro)fluoroalkene compounds, wherein the undesired (hydro)fluoroalkene is R-1225zc, R-1225ye, $F_2C=CF CF_2H$, or a (hydro)fluoroalkene containing a $=CF_2$ moiety, from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent having a basic functionality, activated carbon impregnated with an alkali metal salt, which is a base, or a mixture thereof, wherein the or each undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and one or more undesired (hydro)fluoroalkene compounds."

Auxiliary request **3C**:

"A process for removing an undesired (hydro)fluoroalkene compound, wherein the undesired (hydro)fluoroalkene is R-1225zc, from a composition comprising the undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent having a basic functionality, activated carbon impregnated with a base, or a mixture thereof, wherein the undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and the undesired (hydro)fluoroalkene compound."

Auxiliary request **3D**:

"A process for removing an undesired

(hydro)fluoroalkene compound, wherein the undesired (hydro)fluoroalkene is R-1225zc, from a composition comprising the undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf), the process comprising contacting the composition with an aluminium-containing adsorbent having a basic functionality, activated carbon impregnated with an alkali metal salt, which is a base, or a mixture thereof, wherein the undesired (hydro)fluoroalkene compound is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising the R-1234yf and the undesired (hydro)fluoroalkene compound."

XI. The appellant argued essentially as follows:

Documents D12 and D14 should not have been admitted into the proceedings by the opposition division because they were late filed and were not *prima facie* relevant for the case. They should thus not be considered in the appeal proceedings.

The claimed invention is sufficiently disclosed in the patent in suit, in particular in examples 2 and 4. The arguments based on document D12 are not convincing, since the experiments disclosed therein are based on an adsorbent which should not have been used for the purpose of removing impurities comprising =CHF or =CF₂ containing moieties from a composition comprising R-1234yf. It is also not necessary that every single example shows that the claimed effect is achieved.

The opposition division's decision not to admit auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C and 3D into the proceedings, because they were *prima facie* not allowable, was incorrect. Auxiliary requests 1, 1A

and 1B do not contain added subject-matter, and the requests also meet the requirements of Article 123(3) EPC. The feature added into claim 1 of auxiliary request 2 did not introduce a lack of clarity. The request thus meets the requirements of Article 84 EPC. Auxiliary request 2AA does not comprise added subject-matter (Article 123(2) EPC), and the added feature is clear (Article 84 EPC). Auxiliary requests 3 and 3A to 3D do also not comprise added subject-matter, for the same reasons as auxiliary requests 1, 1A and 1B. Auxiliary requests 2A and 2B meet the requirements of Article 76(1) EPC. The added features are disclosed in the application as filed, in particular in paragraph [0021] of the application as published.

XII. The appellant requests that the decision under appeal be set aside and that the patent be maintained as granted (main request), or based on any of the auxiliary requests 1, 1A, 1B, 2, 2A, 2B, 2AA, 3, 3A, 3B, 3C and 3D, in that order and as filed during the opposition proceedings on 20 May 2021 (auxiliary requests 1, 1A, 1B, 2, 2A, 2B, 3, 3A, 3B, 3C, 3D) or during the oral proceedings before the opposition division on 27 May 2021 (auxiliary request 2AA). The appellant further requests not to admit documents D12 and D14 into the proceedings.

Reasons for the Decision

1. The appeal is admissible.
2. *Procedural aspects*
 - 2.1 The respondent withdrew its opposition during the appeal proceedings on 7 September 2023, and is thus not

party to the appeal proceedings any more, as far as substantive issues are concerned (see T 0789/89, in particular points 2.2 and 2.3 of the reasons). The withdrawal of the opposition, however, does not have any immediate procedural significance on the procedural aspects of the case. The appeal proceedings are still pending, because the opposition division has revoked the patent and the patent proprietor has appealed this decision (see T 0629/90, in particular point 2.2 of the reasons).

- 2.2 With its notice of appeal the appellant has requested that oral proceedings be held in case the appeal was not allowable. On 20 February 2024 the appellant informed the board of its intention not to attend the oral proceedings scheduled for 11 April 2024. A decision based on the written proceedings was requested at the same time. According to established case law, such statement of non-attendance to oral proceedings is considered to be equivalent to a withdrawal of the request for oral proceedings (see Case Law of the Boards of Appeal, 10th edition 2022, Chapter III.C. 4.3.2). The board thus cancelled the oral proceedings.
- 2.3 According to Rule 103(4)(c) EPC, the appeal fee must be reimbursed at 25% if the request for oral proceedings is withdrawn within one month of notification of the communication issued by the Board of Appeal in preparation for the oral proceedings, and no oral proceedings take place. In the present case therefore the question may arise whether there is room for the reimbursement of the appeal fee under this rule.
- 2.4 The board's communication was dated 1 February 2024 and the appellant's letter declaring that it would not attend the oral proceedings was dated 20 February 2024.

The time limit set by the rule has thus been respected. Since the oral proceedings were cancelled, the condition that no oral proceedings take place has also been met.

- 2.5 The only question which remains is whether the appellant's declaration that it would not attend the oral proceedings - which the board considers as a withdrawal of the corresponding request (cf. point 2.2 above) allowing it thus to cancel the scheduled oral proceedings - can also be considered a withdrawal of the request for oral proceedings within the meaning of Rule 103(4)(c) EPC.
- 2.6 The board is aware that at present, there seems to be no definite, consistent answer to that question in the case law of the Boards of Appeal. Reference is made to decisions T 0073/17 of 15 June 2020 and T 0517/17 of 27 October 2020, which held opposing views on this issue. The views of the latter had been followed by the more recent decision T 0104/23 of 09 September 2024, with some additional considerations concerning the legislative intent (T 0104/23, Reasons 11.12).
- 2.7 The board considers that it is only fair to interpret the declaration not to attend oral proceedings in the same way in the application of Rule 103(4)(c) EPC, as it does when it comes to cancelling the oral proceedings. The board thus concurs with the reasoning of decision T 0104/23 (Reasons, point 11).
- 2.8 The appeal fee is therefore to be reimbursed at 25%.

Admittance of documents D12 and D14

3. The opposition division admitted document D12 into the proceedings. According to the appellant, this decision was erroneous. The appellant argued that the document should not be (or should not have been) admitted into the proceedings, because the document was late-filed and *prima facie* not relevant.
4. The board notes that document D12 was filed by the opponent on 29 July 2020, *i.e.* the last day of the time limit set by the opposition division under Rule 116 EPC in preparation for the oral proceedings, initially planned to be held on 29 September 2020. The board further notes that the opposition division admitted the document because - although it was filed after expiry of the opposition period - the data disclosed therein was considered to be of *prima facie* relevance and was likely to change the view of the opposition division on lack of sufficiency of disclosure (see point 3.2 of the impugned decision, paragraph 2).
5. The board further notes that the opposition division relied on the document in the impugned decision, in particular in support of their conclusion that the claimed subject-matter was not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC).
6. Document D12 is thus part of the proceedings.
7. The opposition division also admitted document D14 into the proceedings. This document was filed before expiry of the time limit set by the opposition division under Rule 116 EPC in their second summons to attend oral

proceedings pursuant to Rule 115(1) EPC. The content of the technical data sheet D14 was considered to be simple and to not be surprising to the skilled person working in the area of the contested patent. According to the opposition division, the patent proprietor also had sufficient time to react to the document.

8. The appellant argued that filing of D14 was arbitrary and there was no link to the disclosure of D12, and that the document should not be (or should not have been) admitted into the proceedings.

9. The appellant's argumentation is not convincing.

As already pointed out in the board's communication, the document was admitted by the opposition division, so that it became part of the proceedings. The board sees no reason in the present case or any legal basis to retroactively exclude evidence that has been admitted into the proceedings by the opposition division (see also CLBA 10th edition V.A.3.4.4). This does not mean that the substantive findings in respect of such admitted evidence are not open for review.

10. Document D14 is thus part of the proceedings.

Main request (patent as granted)

Sufficiency of disclosure (Article 100 (b) EPC)

11. According to the opposition division, the contested patent did not disclose the claimed process in a manner sufficiently clear and complete for it to be carried out by the skilled person (Article 100(b) EPC).

12. The board comes to the conclusion that this assessment is correct. The reasons are as follows:

12.1 Claim 1 of the main request is directed to a process for removing one or more undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety from a composition comprising the or each undesired (hydro)fluoroalkene and 2,3,3,3-tetrafluoropropene (R-1234yf).

The process comprises contacting the composition with an aluminium-containing adsorbent, activated carbon, or a mixture thereof.

Each of the undesired (hydro)fluoroalkene compounds is present in an amount of from 0.1 to 1000 ppm, based on the weight of the composition comprising R-1234yf and one or more undesired (hydro)fluoroalkene compounds.

12.2 In order to carry out the claimed process, the skilled person has to be able to contact a composition according to the claim with an aluminium-containing adsorbent, activated carbon, or a mixture thereof - in order to achieve a particular technical effect, *i.e.* removing one or more undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety.

This effect has to be achieved over the entire scope of the claim.

12.3 The contested patent discloses in examples 2 and 3 that the effect cannot always be achieved when carrying out a process having the claimed technical features.

According to example 2, a sample of commercially available R-1243zf - comprising undesired

(hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety, such as Z-R-1225ye (0,8 ppm wt/wt) and R-1225zc (7,4 ppm wt/wt), respectively (see paragraph [0018]) - is treated with specific (pre-)activated adsorbents according to claim 1 (see paragraph [0056]), i.e. "Eta-Alumina", "Carbon 207C", "Carbon 209M", "13-X Sieve" and "AW 500". In certain cases this treatment led to an increase of undesired compounds in the composition, rather than to their removal. In particular, the amount of R-1225zc - an undesired compound containing a =CF₂ moiety - increased from 7.4 ppm to 7.9, 8, and 8.2 ppm when the sample is treated with "Carbon 207C", "13-X Sieve" and "AW 500", respectively. Similarly, the amount of Z-R-1225ye - an undesired compound containing a =CHF moiety - increased from 0.8 ppm to 1 ppm when "Eta-Alumina", "Carbon 207C" and "Carbon 209M" is used, and to 1.1 ppm in case "AW 500" is used (see the table on page 8 of the patent in suit).

According to example 3, a similar process also according to claim 1 led in some cases to an increase of undesired compounds 1225zc (containing a =CF₂ moiety) and 1223ye-Z (containing a =CHF moiety) in a R-1243zf composition (see the adsorbents in lines 2, and 1 to 3, respectively, of the table on pages 10 and 11 of the patent). In other cases, the amount of a desired compound (1234yf) decreased (see the adsorbents in lines 1, 3 to 5 and 7 to 12 of the table on pages 10 and 11 of the patent). In the case of 1234yf (column 5) 10 out of 12 of the examples did not lead to the effect according to claim 1.

Furthermore, a comparison of the results using the adsorbents of lines 5 and 6 of the table on page 10 shows that treatment with apparently similar adsorbents

(the difference between adsorbents "*ST1XCarbon@80 deg autoclave ref 65*" and "*ST1XCarbon@80 deg autoclave ref 66*" is not disclosed) either increased the amount of a desired compound 1234yf (from 27.7435 to 28.0388, see line 6), or decreased it (from 27.7435 to 27.304, see line 5).

12.4 The patent in suit thus discloses in examples 2 and 3 that the claimed process cannot be performed over the entire claimed range. It does furthermore not provide the skilled person with a selection rule to be applied in case of failure. The patent merely discloses individual examples of working and non-working embodiments, all of which are stated to have been carried out with the technical features specified in claim 1 of the main request.

12.5 Furthermore, document D12 discloses additional evidence in support of this conclusion.

D12 discloses experimental data for a process according to claim 1 of the main request. This has not been disputed. In particular, it discloses treating a composition comprising the (desired) compound R-1234yf and the undesired compounds R-1225zc, R-1225ye and R-1234ze either with the adsorbent "*5Å molecular sieve (8-12 mesh obtained from Sigma-Aldrich)*" or the adsorbent "*1/8 inches pellets alumina (Al₂O₃): BASF HF-200XP promoted alumina spheres*".

The undesired compounds as well as the type of adsorbents are preferred embodiments of the patent in suit (see claim 2 and paragraphs [0022] to [0025]).

In these experiments, document D12 discloses that a process according to claim 1 does not lead to the

removal of undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety from the composition comprising R-1234yf (see Tables 3 to 5 vs. Table 1).

12.6 The appellant argued that the adsorbent "*BASF HF-200XP*", used in the second set of experiments disclosed in D12, was not a suitable choice. Although it was known to the skilled person that it decomposes in the presence of activated alumina to produce fluorine and water, it was not known as an agent to purify organic fluorides. The appellant further argued that even if a particular example falling within the claimed scope did not lead to the desired effect, sufficiency of disclosure still had to be acknowledged.

12.7 These arguments are not convincing.

In the present case, "*BASF HF-200XP*" is not the only, or one of a few, non-working embodiments (see above). It also is an example of an aluminium containing adsorbent, and thus an adsorbent according to claim 1 of the main request. Furthermore, as noted before, the patent in suit does not provide any teaching how to proceed in case of failure.

12.8 The appellant argued that the experimental data of D12 was not credible. According to the appellant, the disclosure D12 was almost identical to that of document D15, which has been filed in proceedings concerning a related patent (EP 3 159 328), the only difference being that the adsorbents according to D12 were activated before use (see point 2) of D12), whereas this information was missing in D15. This difference cast doubt on whether the activation step disclosed in D12 was actually carried out (see the last line of

point "2) Adsorbents").

12.9 This argument is also not convincing.

Even if, as submitted by the appellant, the disclosure of D12 is almost identical to that of D15, which has been submitted in the proceedings of another patent, the content of D15 is not pertinent for the present case. The content of D15 is not suitable to cast doubt about the content of D12, in particular not in view of the declaration of Dr. Xuehui Sun (see D19, point 6).

12.10 The appellant argued that examples 2 and 4 of the contested patent also disclosed working examples. The claimed method was thus sufficiently disclosed.

12.11 The argument is not convincing either, as noted in points 12.3 and 12.4 of this communication.

13. In conclusion, the main request is not allowable, because the claimed invention is not disclosed in a manner sufficiently clear and complete for it to be carried out by the skilled person (Article 100(b) EPC).

Auxiliary requests

14. The opposition division did not admit auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C and 3D into the proceedings. The appellant contested this decision.

The opposition division found auxiliary requests 2A and 2B not to be allowable, since claim 1 of these requests did not meet the requirements of Article 76(1) EPC. This was also contested by the appellant.

15. The board comes to the following conclusions:
16. According to Article 12(6) RPBA the board shall not admit requests which were not admitted in the earlier proceedings, unless the decision not to admit them suffered from an error in the use of discretion or unless the circumstances of the appeal case justify their admittance.
 - 16.1 The opposition division's decision not to admit auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C and 3D did not suffer from an error in the use of its discretion under Article 114(2) and Rule 116(1) EPC.
 - 16.2 On the contrary, the opposition division exercised its discretion taking into account the right principles, and did not decide in an arbitrary or unreasonable way.
 - 16.3 The opposition division set out that the auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C and 3D were filed after expiry of the deadline set in accordance with Rule 116 EPC (26 March 2021), and were thus late-filed (see points 5, 6, 9 and 10 of the impugned decision). This was undisputed.
 - 16.4 The opposition division subsequently argued that none of these requests were *prima facie* allowable. In particular, the opposition division considered auxiliary requests 1, 1A and 1B to *prima facie* contravene the requirements of Article 123(3) EPC (see the first paragraph on page 11), auxiliary request 2 to *prima facie* contravene the requirements of Article 84 EPC (see the last paragraph on page 12), auxiliary request 2AA lead to foreseeable additional problems with the requirements of Articles 84 and 76(1) EPC (see paragraph 3 of point 9 of the impugned

decision). Auxiliary requests 3 and 3A to 3D were considered not to *prima facie* meet the requirements of Article 123(3) EPC.

16.5 Also, the circumstances of the appeal case do not justify their admittance, for the following reasons:

Auxiliary requests 1, 1A and 1B

16.6 The process according to claim 1 of the granted patent is limited to a process for removing (hydro) fluoroalkene compounds containing a =CHF or a =CF₂ moiety from a composition, wherein the or each of these compounds is present in an amount of 0.1 to 1000 ppm.

16.7 The process according to claim 1 of auxiliary request 1, however, is directed to a process for removing those (hydro)fluoroalkene compounds which are explicitly listed in the claim, *i.e.* R-1225zc, R-1225ye and F₂C=CF₂H. Accordingly, only the amount of these specific compounds in the composition having a =CHF moiety is limited to an amount of from 0.1 to 1000 ppm, whereas the amount of any other (hydro)fluoroalkene containing a =CHF moiety in the composition is not limited any more. The claim is thus directed to removing compounds from a composition which can contain an unlimited amount of (hydro)fluoroalkene compounds containing a =CHF moiety and being different from R-1225zc, R-1225ye and F₂C=CF₂H.

16.8 As a result, claim 1 of auxiliary request 1 is directed to subject-matter which was not covered by the scope of claim 1 of the patent as granted. The request does thus not meet the requirements of Article 123(3) EPC, as correctly concluded by the opposition division.

16.9 The same holds true for claim 1 of auxiliary requests 1A and 1B.

Auxiliary request 2

16.10 Claim 1 of auxiliary request 2 comprises the feature "*... the process comprising contacting the composition with an aluminium-containing adsorbent, activated carbon, **doped with a base, such as either potassium hydroxide or carbonate**, or a mixture thereof, ...*", wherein the highlighted part has been added with respect to claim 1 of the patent as granted. According to the appellant, the feature found a basis in the description of the application as filed.

16.11 The board concurs with the opposition division in that the added feature may introduce a lack of clarity (Article 84 EPC). It is unclear whether the added feature limits the adsorbent "*activated carbon*" only, or all of the adsorbents preceding the feature.

16.12 It furthermore appears that none of the amendments made in these requests are appropriate to overcome the objections under Article 100(b) EPC which had been raised with respect to the main request. The appellant also has not provided any arguments in that respect.

17. For these reasons the board does not admit the auxiliary requests 1, 1A, 1B and 2 into the proceedings (Article 12(6) RPBA).

Auxiliary requests 2AA

18. The opposition division did not admit auxiliary request 2AA into the proceedings. The request was filed during the oral proceedings before the opposition division.

The opposition division concluded that the request was *prima facie* not allowable, because of additional potential non-compatibility with the requirements of Articles 84 and 76(1) EPC.

This finding was also contested by the appellant.

19. The board comes to the conclusion that the reasoning of the opposition division is correct.

Compared to claim 1 of auxiliary request 2A (see points 21. to 24. below), claim 1 of auxiliary request 2AA contains the additional feature that the aluminium-containing adsorbent has "*... an acidic or basic functionality ...*", whereas it only had "*... a basic functionality ...*" according to claim 1 of auxiliary request 2A. This amendment directs the claimed subject-matter in a different direction, which is detrimental to procedural economy. The added feature may also create further objections under Article 76(1) EPC, since the amendment does not seem to overcome the corresponding objection brought forward against claim 1 of auxiliary request 2A (see point 23. of this decision). The feature may also lead to further objections under Article 84 EPC, since there appears to be no definition thereof in the patent.

- 19.1 The amendment is also not suitable to overcome the objection on the basis of Article 100(b) EPC raised with respect to the main request, as is the case with auxiliary requests 1, 1A, 1B and 2 (see point 16.12 above). Also, the appellant has not submitted any arguments in that respect.

19.2 Auxiliary request 2AA is thus not admitted into the proceedings (Article 12(6) RPBA).

Auxiliary requests 3 and 3A to 3D

20. The division did not admit auxiliary requests 3, 3A to 3D for the same reasons as auxiliary requests 1, 1A and 1B. The board comes to the conclusion that this finding was correct (see above points 17.6 to 17.9). Auxiliary requests 3, 3A and 3B are therefore not admitted (Article 12(6) RPBA).

Auxiliary request 2A and 2B

21. The opposition division admitted auxiliary requests 2A and 2B into the proceedings. It was concluded, however, that claim 1 of these requests did not meet the requirements of Article 76(1) EPC.

22. According to the appellant, the earlier application as filed provided a basis for amended claim 1 of auxiliary requests 2A and 2B.

23. The board concurs with the opposition division's argumentation. The combination of the features "*undesired (hydro)fluoroalkene compounds containing a =CHF or a =CF₂ moiety*", "*2,3,3,3-tetrafluoropropene (R-1234yf)*", "*aluminium-containing adsorbent having a basic functionality*", "*activated carbon impregnated with a base*" and "*in an amount of from 0.1 to 1000 ppm*" with the features of claim 1 of the earlier application as filed is not disclosed in the earlier application as filed, in particular not in the passages bridging pages 3 and 4 and pages 4 and 5, and in claims 1, 6 and 14 (Article 76(1) EPC). The same reasoning applies to

claim 1 of auxiliary request 2B.

24. Furthermore, the appellant has not submitted any arguments why the amendments could be suitable to overcome the objection under Article 100(b) EPC raised with respect to the main request. This is not apparent to the board either. The board thus concludes that auxiliary requests 2A and 2B are not allowable for lack of sufficiency of disclosure (Article 83 EPC).

Conclusion

25. In summary, the board concludes that there is no allowable request, because
- (a) the main request is not allowable (Article 100(b) EPC),
 - (b) auxiliary requests 1, 1A, 1B, 2, 2AA, 3, 3A, 3B, 3C and 3D are not admitted into the proceedings (Article 12(6) RPBA),
 - (c) auxiliary requests 2A and 2B are not allowable (Articles 76(1) and 83 EPC).
26. Therefore the appeal cannot succeed.

Order

For these reasons it is decided that:

1. The appeal is dismissed.
2. The appeal fee is to be reimbursed at 25%.

The Registrar:

The Chairman:



L. Stridde

P. Gryczka

Decision electronically authenticated