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**Datasheet for the decision
of 8 November 2022**

Case Number: T 0561/19 - 3.3.10

Application Number: 12732057.0

Publication Number: 2661420

IPC: C07C21/18, C07C19/10,
C07C17/25, C07C17/20,
C07C17/383, B01D3/00

Language of the proceedings: EN

Title of invention:

LOW TEMPERATURE PRODUCTION OF 2-CHLORO-3,3,3-TRIFLUOROPROPENE

Patent Proprietor:

Honeywell International Inc.

Opponent:

ARKEMA FRANCE

Headword:

Relevant legal provisions:

RPBA Art. 12(1)

EPC Art. 104(1)

Keyword:

Extent of the appeal - claims 6 to 8 not part of the proceedings
Late filed objection against claims 6 to 8 - not admitted
Sufficiency of disclosure - yes
Amendments - allowable
Inventive step - yes
Different apportionment of costs - yes

Decisions cited:

T 1771/08, T 1016/93, T 0336/86, T 0028/91

Catchword:



Beschwerdekammern

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Case Number: T 0561/19 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 8 November 2022

Appellant: ARKEMA FRANCE
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
21 December 2018 concerning maintenance of the
European Patent No. 2661420 in amended form.**

Composition of the Board:

Chair P. Gryczka
Members: R. Pérez Carlón
L. Basterreix

Summary of Facts and Submissions

I. The appellant (opponent) appealed against the opposition division's decision concerning maintenance of European patent No. 2 661 420 in the form of what was then the pending main request, which is also the respondent's (patent proprietor's) main request in these appeal proceedings.

II. Claim 1 of the main request, which corresponds to claim 1 of the patent as granted, reads as follows:

"A method for the production of 2-chloro-3,3,3-trifluoropropene (1233xf) comprising the continuous liquid phase reaction of 1,1,1,2,3-pentachloropropane and anhydrous HF, without the use of a catalyst at a temperature range of 65°C to 175°C;

wherein the reaction takes place in one or more reaction vessels, each one in succession converting a portion of the original reactants fed to the lead reaction vessel and wherein the reactions are run in a continuous fashion."

III. Notice of opposition was filed on the grounds of added subject-matter (Article 100(c) EPC), insufficiency of disclosure (Article 100(b) EPC) and lack of novelty and inventive step (Article 100(a) EPC).

IV. The documents filed include the following:

D1 WO 2008/054781 A1
D2 US 2010/0185030 A1
D3 WO 2010/123148 A1
D4 WO 2009/015317 A1

D7 WO 2010/131766 A2
D13 Parr Instrument Company "Stirred Reactors and
Pressure Vessels" Bulletin 4500, Volume 14,
page 10
D14 US 2014/0235903 A1
D15 Example EB115

V. The opposition division concluded that the claims of the main request had the required basis in the application as originally filed. The claimed method was sufficiently disclosed for it to be carried out by a person skilled in the art. It was also novel over documents D1 and D7 and inventive regardless of whether document D2 or D4 was the closest prior art.

Two oral proceedings took place before the opposition division, which granted a different apportionment of the costs for the second oral proceedings in favour of the patent proprietor.

VI. The appellant's arguments were as follows.

The subject-matter of claims 6 to 8 was part of the appeal proceedings since the notice of opposition contained objections against them.

Claims 1 and 5 of the main request did not have a basis in the application as originally filed. The temperature required by claim 1 was disclosed in combination with further limitations which were not features of said claim. The steps of claim 5 were disclosed as being subsequent to steps (c) and (d), which were no longer required.

The claimed invention was not sufficiently disclosed for it to be carried out by a person skilled in the

art. The reaction of 1,1,1,2,3-pentachloropropane (240db) with HF did not inevitably yield 1233xf, as shown by experimental evidence D15 and example 6 of document D7. In addition, the material of the reactor catalysed the process, so the patent did not disclose a method "in the absence of a catalyst", as required by claim 1.

Document D1 and example 5 of D7 disclosed all the features of claim 1. The claimed method was thus not novel.

Document D2 was the closest prior art for the claimed method, which merely differed on account of the choice of starting material. For want of any comparison, the sole problem which could be considered solved was providing an alternative. D3 disclosed 240db as a suitable starting material. The claimed solution was thus not inventive.

A different apportionment of costs could only be granted following negligence, will to harm or abuse of procedure. As none of these conditions was met, the opposition division's decision in this respect should be reversed.

VII. The respondent argued as follows.

There were no arguments on the integrated system of claims 6 to 8, in either the decision under appeal or the appellant's grounds of appeal. Those filed in response to the board's communication should not be admitted into the proceedings pursuant to Article 13(1) RPBA 2020.

The temperature required by claim 1 was disclosed on

page 9, line 10 of the application as originally filed. Claim 5 had a basis on page 4, lines 11 to 24.

The claimed invention was sufficiently disclosed for it to be carried out by a person skilled in the art following example 3 of the patent. The conditions in example 6 of D7 and experimental evidence D15 did not allow 1233xf to be obtained because most of the HF was vented.

Document D1 did not link 240db and 1233xf as starting material and product. D7 disclosed a process in an autoclave, so it was not continuous. The claimed method was thus novel.

Starting from D2, and even if no improvement were to be acknowledged, the problem addressed by the claimed invention was nevertheless to provide a method for producing 1233xf which, like that of D2, yielded good results. The claimed solution was characterised by the choice of starting material, 240db. It would not have been obvious for a skilled person as 240db was disclosed in the prior art in the context of a process at a much higher temperature. The claimed method was thus inventive.

Negligence, will to harm or abuse of procedure was not a prerequisite for a different apportionment of costs. In the case at issue, the appellant's filing of D13 to D15 and the admission of those documents into the proceedings necessitated a second oral proceedings. An apportionment of the costs linked to the second oral proceedings in favour of the respondent was thus correct.

VIII. The board informed the parties in a communication dated 4 August 2020 that it was not inclined to reverse the opposition division's decision to grant a different apportionment of costs, and that the scope of the appeal did not include claims 6 to 8. The board considered the claimed method to be novel but not inventive.

IX. Oral proceedings before the board of appeal took place on 8 November 2022 by means of videoconference as requested by both parties.

X. The parties' final requests were as follows.

The appellant requested that the decision under appeal be set aside, the patent be revoked and the decision on a different apportionment of costs be reversed.

The respondent requested that the appeal be dismissed, or that the patent be maintained in the form of one of auxiliary requests 1 to 7, filed with the reply to the grounds of appeal dated 19 September 2019, or auxiliary request 8, filed with a letter dated 14 December 2020.

XI. At the end of the oral proceedings, the decision was announced.

Reasons for the Decision

1. The appeal is admissible.

2. Scope of the appeal

2.1 The main request has two independent claims. Claim 1 relates to a method for producing 2-chloro-3,3,3-trifluoropropene (1233xf); claim 6 relates to a system

for producing it.

- 2.2 Under Article 12(1) RPBA 2007, appeal proceedings have to be based on the notice and statement of grounds of appeal.

The appellant did not dispute that its statement of grounds of appeal did not contain any arguments concerning claims 6 to 8.

The opposition division's decision does not address the system of claims 6 to 8 either.

The appellant did not dispute that the arguments with respect to the method of claim 1 did not necessarily apply to the integrated system of claim 6.

- 2.3 In its communication in preparation for oral proceedings, the board informed the parties that the appeal did not extend to claims 6 to 8.

- 2.4 In response to the board's communication, the appellant argued in a letter dated 10 December 2020 that the subject-matter of claims 6 to 8 relating to the system was not inventive.

The appellant's arguments concerning claims 6 to 8 were filed after the entry into force of the 2020 version of the RPBA. Admittance of this amendment to the appellant's case into the proceedings is thus governed by Article 13(1) RPBA 2020.

The appellant provided no reason why the objection had been raised at that late stage. Even if it were accepted, in the appellant's favour, that the scope of the appeal extends to claims 6 to 8, the inventive step

objection directed to the integrated system of claims 6 to 8 is not admitted into the proceedings since it was presented at a late stage of the proceedings.

- 2.5 The board does not agree with the appellant's assertion that there was no need to argue specifically on claims 6 to 8 in said statement of grounds since the inventive step objection against the subject-matter of claims 6 to 8 had been raised in the notice of opposition and the statement of grounds of appeal contained objections against all the requests on file.

3. Amendments

- 3.1 Independent claim 1 has a basis in claim 1 as originally filed and on page 9, line 10, which discloses the temperature range of 65°C to 175°C.

Claim 1 as originally filed required a "continuous low temperature liquid phase" reaction. The skilled person would have sought to clarify what temperature is to be considered "low" in the context of the claimed invention. The temperature in claim 1 corresponds to the broadest interval disclosed in the application as originally filed. The amendment therefore does not provide any new technical information.

- 3.2 The appellant argued that the temperature required by claim 1 was disclosed on page 9, line 10 in combination with obtaining 1233xf in a high yield, which was not a feature of claim 1.

However, high yield is not a feature of the claimed method but the direct consequence of using said temperature. It is thus not necessary to explicitly limit the claimed subject-matter by introducing it into

the claim.

- 3.3 Claim 6 as originally filed defines steps (e) to (h). It is dependent on its preceding claim, which requires steps (c) and (d). Claim 5 of the main request has the same wording of claim 6 as originally filed but depends on claim 2 and thus does not require steps (c) and (d). The claims as originally filed thus do not provide a basis for claim 5 of the main request.

A basis can, however, be found on page 4, lines 13 to 24 of the application as originally filed, which does not disclose steps (e) to (h) in combination with steps (c) and (d). Contrary to the appellant's arguments, steps (e) to (h) do not necessarily relate to steps subsequent to steps (c) and (d); they could also represent a particular embodiment of them or overlap with them.

- 3.4 Claims 1 and 5 thus have the required basis in the application as originally filed.

4. Sufficiency of disclosure

- 4.1 It was not disputed that the patent in suit provides at least one way to carry out the invention, represented by example 3.

- 4.2 The appellant argued that the claimed method was not sufficiently disclosed across the whole scope of the claimed subject-matter. In this respect it relied on example 6 of D7 and experimental evidence D15, both of which disclosed the reaction of 240db with HF at temperatures required by claim 1 in the absence of a catalyst. No 1233xf was detected, however.

4.3 Example 6 of D7 does not analyse the composition of the gas phase obtained, which should have contained any 1233xf present. It thus cannot be concluded that no 1233xf was obtained.

4.4 Experimental evidence D15 was run in an autoclave. As the reaction proceeded "the products of the reaction were continuously taken out of the reactor" and "enter a scrubber, which collects hydracids HF and HCl".

HF is a reagent in the method of claim 1. Removing it from the reaction mixture explains why no 1233xf was formed. Confronted with this failure, the skilled person would have kept HF in the reaction medium. The failure can thus be turned into a success by following the instructions in example 3 of the patent and using common general knowledge. D15 therefore does not cast doubt on the sufficiency of the disclosure of the claimed method.

4.5 In point 4.6 of the reply to the grounds of appeal and with reference to the HF vapour pressure curve, the respondent argued that HF was removed from the system of D15 over time. This was the reason why the process had failed.

The appellant concluded that HF vapour pressure played a fundamental, non-disclosed role in the claimed method, so it was not sufficiently disclosed for this reason too.

However, the board fails to see what information on the well-known phase behaviour of HF could render the claimed invention insufficiently disclosed. D15 itself explicitly disclosed that HF was vented from the system. The vapour pressure curve of HF merely

corroborates the disclosure of D15.

- 4.6 The appellant also argued that the material of Parr reactors (D13) catalysed the reaction required by claim 1 (D14), so none of the examples of the patent was made in the absence of a catalyst. For that reason too, the claimed invention was not sufficiently disclosed.

However, example 3 of the patent is not carried out in a Parr reactor. For this reason alone, the argument is not convincing.

In addition, document D13 discloses that Parr reactors can be made of a number of different materials. One of them, Alloy 625, is catalytic for a different reaction (D14) from that required by claim 1. There is thus no reason to conclude that the material of every Parr reactor must inevitably be catalytic, let alone in the reaction required by claim 1.

- 4.7 The appellant's arguments that the claimed invention is insufficiently disclosed are thus not convincing.

5. Novelty

- 5.1 The appellant argued that documents D1 and D7 disclosed all the features of the claimed method.

5.2 D1

At the oral proceedings the appellant relied on its written arguments with respect to D1. The board thus sees no reason to depart from its preliminary view agreeing with the opposition division's conclusion. Although D1 discloses both 240db and 1233xf, it does

not link them as reagent and product. It thus does not disclose a method of obtaining 1233xf from 240db, as required by claim 1.

5.3 D7

Example 5 of document D7 discloses the reaction of 240db with HF producing a small amount of 1233xf (1.1%, page 17, lines 30 and 31).

The reaction is, however, carried out in an autoclave instead of continuously. For this reason alone, the claimed method is novel over that of D5.

The appellant argued that the autoclave of D7 was equipped with a purge line (page 17, line 1) to remove the reaction product HCl (page 17, lines 13 to 15). This meant that the process of example 5 of D7 was continuous.

However, the feature "continuous" in the context of an industrial chemical process indicates a set-up by which reagents can be constantly introduced and the reaction product(s) constantly withdrawn. Venting HCl twice, as in example 5 of D7, does not render the process "continuous" in the usual meaning of the term.

5.4 The claimed method is thus novel.

6. Inventive step

6.1 Claim 1 of the patent relates to a method for producing 1233xf by reacting 240db with anhydrous HF in a continuous liquid phase reaction without a catalyst at 65°C to 175°C.

6.2 Closest prior art

At the oral proceedings before the board, the appellant only relied on document D2 as the closest prior art. Like the claimed method, D2 relates to preparing 1233xf in an uncatalysed liquid phase process.

The process of D2 differs from the claimed method by

- using a different starting material, namely 1,1,2,3-tetrachloropropene (1230xa), and
- being carried out in an autoclave instead of being continuous

At the oral proceedings the respondent did not rely on the type of HF (anhydrous) as a distinguishing feature over the closest prior art.

6.3 Technical problem addressed by the invention

The respondent considered that the problem addressed by the claimed invention was to provide an improved method for producing 1233xf.

It further argued that, if no improvement over the method of D2 were to be acknowledged, the problem addressed by the claimed invention should nevertheless be considered that of providing a method for producing 1233xf which, like that of D2, yields good results.

6.4 Solution

Whichever of the two problems is considered, the claimed solution is characterised by the starting material, 240db.

At the oral proceedings, the respondent did not assert that the feature requiring the method to be continuous was an inventive part of the claimed solution.

6.5 Success

6.5.1 The board agrees with the appellant that the available data cannot show that the distinguishing feature leads to an improvement over the method of the closest prior art D2.

Comparative example 1, which uses 1230xa as the starting material, was carried out at a higher temperature than example 1, which uses 240db.

Thus, the available evidence does not make it possible to conclude that the most ambitious problem formulated by the respondent was credibly solved.

6.5.2 The results achieved in the patent are nevertheless comparable with those of D2.

Example 3 of the patent discloses a 95% yield of 1233xf crude; D2 achieves 97.2%, at a slightly lower temperature.

It is thus credible that the claimed method solves the less ambitious problem formulated by the respondent, i.e. that of providing a method for producing 1233xf which, like that of D2, yields good results.

6.6 It thus remains to be decided whether the proposed solution to the objective problem specified above would have been obvious for the skilled person in view of the prior art.

Document D3 discloses 240db as a suitable starting material for preparing 1233xf (page 5, line 13; examples) on an industrial scale (page 2, last line), in a continuous manner, without a catalyst (page 3, lines 8 and 9). The process is, however, preferably carried out at 350°C to 450°C (page 7, line 17), which is considerably higher than the temperature required by claim 1.

On page 7, lines 20 to 22, D3 discloses that a lower temperature reduces the conversion rate.

The examples confirm that lower temperatures are not desirable: example 1, at 400°C, achieves 91.8% selectivity towards 1233xf; example 3, at 375°C, achieves 61.6%. Decreasing the reaction temperature by just 25°C reduces the selectivity towards 1233xf by a third.

Starting from D2 and seeking an alternative but comparable method for preparing 1233xf, the skilled person learns in D3 that preparing 1233xf from 240db requires 400°C for good results and that a small decrease in temperature leads to drastically worse results. The skilled person thus has no reason to conclude that a process in liquid phase at less than 175°C, as required by claim 1, could also lead to good results. D3 teaches exactly the opposite.

The claimed solution would thus not have been obvious for a skilled person and is therefore inventive (Article 56 EPC).

6.7 In a different line of reasoning, the appellant asserted that document D4 could also be considered the

closest prior art. It did not present any arguments in this respect at the oral proceedings.

Like D2, D4 discloses preparing 1233xf from 1230xa. Since the problem addressed by the claimed invention would be the same and the claimed solution would also be characterised by the choice of starting material, the arguments and conclusion in relation to D2 as the closest prior art apply in this case too.

6.8 Since the claimed method would not have been obvious for the skilled person, the subject-matter of claims 1 to 5 is thus inventive.

7. Different apportionment of costs

7.1 Two oral proceedings took place before the opposition division.

7.2 At the first oral proceedings the appellant filed experimental evidence D15 and documents D13 and D14, which were allegedly very relevant for the issue of sufficiency of disclosure.

7.3 The respondent requested that these documents not be admitted and, if they were, that the oral proceedings be adjourned. In the event that the oral proceedings were adjourned, it requested that the costs arising from the second oral proceedings be borne by the appellant.

7.4 The opposition division admitted D13 to D15 into the proceedings and adjourned the oral proceedings.

The opposition division ordered that the costs incurred as a result of the second oral proceedings be borne by

the appellant.

7.5 The appellant did not challenge the need for adjournment, either before the opposition division or on appeal. The appellant argues that a different apportionment of costs could not be granted merely because a further oral proceedings was needed. Only a party that had been negligent or willing to harm the other should bear the other party's costs. There was no negligence or will to harm with the filing of D13 to D15.

7.6 The opposition division saw no negligence or will to harm in the appellant's behaviour. The respondent did not raise any objection in that respect either.

Negligence, will to harm or abuse of procedure is, however, not a prerequisite for a different apportionment of costs. It suffices that there is no good justification for the late filing and that the late filing is the cause of both the adjournment of the oral proceedings and extra costs for the other party.

If a party chooses to file evidence so extremely late, the risk is that said evidence will not be admitted into the proceedings or that, if the evidence is admitted, the party has to bear costs incurred as a result by the other party.

7.7 It was not disputed that the oral proceedings were adjourned solely due to the filing and admission of D13 to D15 during the first oral proceedings.

7.8 The appellant provided no good reason for filing this evidence at that point in time.

The appellant argued before the board that experimental evidence D15 merely supported an objection of lack of sufficient disclosure based on example 6 of document D7, which had been on file from the outset of the opposition proceedings. In view of the opposition division's negative preliminary view, D15 was intended to reproduce example 6 of document D7. Experimental evidence D15 had been concluded the day before the oral proceedings and filed as soon as available.

Experimental evidence D15 was carried out in an autoclave and run for 24 hours, followed by an analysis of the products obtained. The hardware is common, the chemicals available and the time needed short. The products were analysed by GC; no difficulties were reported, nor are any apparent in this respect. There was thus no apparent reason why this relatively simple experiment could not have been carried out until two years after the grant of the patent.

At the oral proceedings, the appellant argued that D15 was a response to the opposition division's preliminary opinion that example 6 of D7 did not demonstrate the insufficiency of disclosure of the patent.

The opposition division's preliminary view, annexed to the summons, was issued almost eight full months before the oral proceedings. There was thus ample time to carry out experiments, if needed.

In addition, neither the opposition division's communication nor the notice of opposition contains any reference to example 6 of D7. The appellant's argument thus contradicts the available evidence.

- 7.9 At the oral proceedings before the board, the appellant argued that the filing of experimental evidence D15 had been announced in advance. The appellant had not cited any passage of the written procedure which could show that to be the case, nor can the board find any.
- 7.10 There was thus no good reason for not having filed D15 earlier. The admission of D15 was the reason why the oral proceedings were adjourned. The additional costs caused by the adjournment should thus be borne by the party causing it, so the opposition division's decision in this respect was correct.
- 7.11 Since the filing of D15 alone justifies a different apportionment of costs, it is not necessary to examine whether the filing of D13 and D14 also had a bearing in this respect.
- 7.12 The appellant relied on T 1771/08, T 1016/93, T 336/86 and T 28/91 to show that the mere postponement of oral proceedings was not a sufficient condition for granting a different apportionment of costs.

The board agrees with the appellant that a mere postponement is not a sufficient condition for granting a different apportionment of costs, as shown by the case law cited.

However, none of these decisions relates to a situation comparable with the one in hand.

In T 1771/08, the board did not award costs. The postponement of the oral proceedings was, however, due to previously scheduled oral proceedings on the same day and not caused by a party's behaviour.

In the case at issue in T 1016/93, document D4 was filed four weeks prior to the oral proceedings before the board, which the patent proprietor did not attend. The board concluded that D4 was a response to substantial amendments to the claimed subject-matter and admitted it into the proceedings. No postponement was involved and a different apportionment of costs was not requested.

The situation in T 336/86 involved the filing of a very relevant document at the oral proceedings before the board. Three months later, the patent proprietor requested that the patent be revoked and that the opponent bear its costs, on the grounds that the oral proceedings would have been unnecessary if that document had been filed earlier. The situation is thus not comparable with the case in hand as no additional oral proceedings were needed.

Lastly, T 28/91 concerns an appeal following rejection of the opposition and non-admittance of late-filed evidence; it concluded with dismissal of the appeal. The patent proprietor argued that the oral proceedings before the board had been redundant and requested a different apportionment of costs, which was refused. The facts are thus not comparable with the case in hand.

7.13 The board therefore sees no fault in the opposition division's decision to award a different apportionment of costs pursuant to Article 104(1) EPC.

8. Other issues

The appellant also argued that the right to priority had not been validly claimed. Lack of priority,

however, would not have any bearing on the outcome of these proceedings. It is thus not necessary to decide on this point.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



C. Rodríguez Rodríguez

P. Gryczka

Decision electronically authenticated