

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen
(D) [] No distribution

**Datasheet for the decision
of 23 February 2010**

Case Number: T 1877/08 - 3.3.10

Application Number: 93111181.9

Publication Number: 0568115

IPC: C09K 5/04

Language of the proceedings: EN

Title of invention:

Near-azeotropic blends for use as refrigerants

Patentee:

E.I. DU PONT DE NEMOURS AND COMPANY

Opponent:

ELF ATOCHEM S.A.
Imperial Chemical Industries PLC
STAR REFRIGERATION LIMITED
SOLVAY SOLEXIS S.p.A.
RHONE-POULENC CHIMIE

Headword:

Refrigerants/E.I. DU PONT DE NEMOURS AND COMPANY

Relevant legal provisions:

EPC Art. 56, 87, 88, 107

Keyword:

"Transfer of opposition (no); Appeal admissible (yes)"
"Priority (no): overlapping ranges of numerical values - no
basis in priority document"
"Inventive step (no) - purported improvement not shown -
arbitrary selection within the ambit of closest prior art"

Decisions cited:

G 0004/88, G 0002/98, G 0002/04, T 0020/81, T 0249/88,
T 1053/93, T 0318/02, T 1197/03

Catchword:

-



Case Number: T 1877/08 - 3.3.10

D E C I S I O N
of the Technical Board of Appeal 3.3.10
of 23 February 2010

Party as of Right:
(Opponent 01)

ELF ATOCHEM S.A.
4/8 Cours Michelet
F-92800 Puteaux (FR)

Representative:

Dang, Doris
ARKEMA FRANCE
Département Propriété Industrielle
420 Rue d'Estienne d'Orves
F-92705 Colombes Cedex (FR)

Appellant:
(Opponent 02)

Imperial Chemical Industries PLC
Imperial Chemical House, Millbank
London SW1P 3JF (GB)

Representative:

Dee, Ian Mark
Potter Clarkson LLP
Park View House
58 The Ropewalk
Nottingham NG1 5DD (GB)

Party as of Right:
(Opponent 04)

SOLVAY SOLEXIS S.p.A.
Via Turati, 12
I-20121 Milano (IT)

Representative:

Jacques, Philippe
Solvay S.A.
Département de la Propriété Industrielle
Rue de Ransbeek, 310
B-1120 Bruxelles (BE)

Respondent:
(Patent Proprietor)

E.I. DU PONT DE NEMOURS AND COMPANY
1007 Market Street
Wilmington, DE 19898 (US)

Representative:

Matthews, Derek Peter
Dehns
St Bride's House
10 Salisbury Square
London EC4Y 8JD (GB)

Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
28 July 2008 concerning maintenance of European
patent No. 0568115 in amended form.

Composition of the Board:

Chairman: R. Freimuth
Members: C. Komenda
J.-P. Seitz

Summary of Facts and Submissions

I. The Appellant (Opponent 02) lodged an appeal on 23 September 2008 against the interlocutory decision of the Opposition Division posted on 28 July 2008 which found that the amended European patent Nr. 568 115 based on European application Nr. 93 111 181.9 met the requirements of the EPC.

II. Notice of Opposition had been filed by the Appellant and the Parties as of right (Opponents 01 and 04) requesting revocation of the patent as granted in its entirety on the grounds of lack of novelty and lack of inventive step pursuant to Article 100(a) EPC. *Inter alia* the following documents were submitted in the opposition proceedings:

(2) EP-A-0 419 042,

(3) JP-A-55 090 581 and

(4) JP-A-02 240 186.

III. The claims underlying the decision under appeal were those remitted by the Boards of Appeal to the department of first instance according to its decision T 1197/03, which decided that the subject-matter of the claims was novel over document (2). Independent claim 1 read as follows:

"1. A near azeotropic composition which is a blend of chlorodifluoromethane, propane and pentafluoroethane in the proportions of 30 to 65 weight percent chlorodifluoromethane, 1 to 10 weight percent propane and 33 to 69 weight percent pentafluoroethane."

IV. The Opposition Division held that the subject-matter of the claims was also novel over the other cited prior art documents. Further, the decision found that a part of claim 1 was not entitled to the earlier of the two claimed priority dates, which was that of US 558346 of 26 July 1990. Therefore, at least for that part of claim 1, document (2), which was published after the first priority date of the patent in suit, represented prior art according to Article 54(2) EPC. Further, the Opposition Division held that starting from document (2) as closest state of the art the subject-matter of the claims involved an inventive step.

V. In his statement of the Grounds for Appeal dated 20 November 2008 the Appellant requested that the opposition filed in the name of "Imperial Chemical Industries PLC" be transferred to "Ineos Fluor Holdings Limited", further, that the appeal be deemed to have been filed in the name of "Ineos Fluor Holdings Limited" and that the Appellant "Imperial Chemical Industries PLC" be replaced by "Ineos Fluor Holdings Limited". In support for his request he submitted an "Assignment" dated 9 January 2001, which referred to the "Master Sale and Purchase agreement" dated 5 December 2000.

As to the substantive matter the Appellant brought forward that claim 1 was not entitled to the earlier priority date of 26 July 1990. Therefore, document (2) represented prior art according to Article 54(2) EPC. Starting from document (2) as closest state of the art the subject-matter of at least that part of claim 1, which was not entitled to the first priority date, did not involve an inventive step. Document (2) disclosed

already a refrigerant being a ternary blend of chlorodifluoromethane, pentafluoroethane and propane, which was suitable for replacing the refrigerant R-502. The problem of the patent in suit, like in the closest prior art document (2), was to replace the ozone-depleting refrigerant R-502. A skilled person starting from a ternary blend as disclosed in document (2) would have modified the amounts of chlorodifluoromethane and pentafluoroethane indicated in document (2), since the specific amounts indicated in document (2) were preferred amounts only. The general teaching of document (2) was that a major portion of chlorodifluoromethane was used in combination with pentafluoroethane and a non-flammable amount of propane. Since pentafluoroethane was known to have no ozone depletion potential he would, thus, have increased the amount of pentafluoroethane in the ternary blend, while reducing that of chlorodifluoromethane and would have arrived at the subject-matter of the patent in suit.

- VI. The Respondent contested the findings of the Appellant and argued that starting from document (2) the subject-matter, which was not entitled to the first priority of 26 July 1990 did involve an inventive step, since the prior art did not give any incentive to increase the amount of pentafluoroethane while reducing the amount of chlorodifluoromethane, when looking for a suitable replacement for refrigerant R-502. In particular, a skilled person could not have expected that mixtures of chlorodifluoromethane, pentafluoroethane and propane, which were outside the specific ranges indicated in document (2), col. 3, lines 8 to 13, still would exhibit a near azeotropic behaviour and would have

properties, such as depletion temperature, more closely matching those of R-502.

- VII. In a communication pursuant to Article 15 RPBA the Board informed the Parties of the issues to be discussed during Oral Proceedings and that the transfer of opposition, on a preliminary view, was not allowable.
- VIII. The Parties as of right did neither file comments nor requests.
- IX. The Appellant requested in writing that the decision under appeal be set aside and that the patent be revoked.

The Respondent requested that the decision under appeal be set aside and that the patent be maintained on the basis of claims 1 to 4 as remitted by the Board of Appeal in its decision of 14 June 2005 in case T 1197/03 and refiled at the oral Proceedings held on 23 February 2010 before the present Board.

- X. The oral proceedings were held in the absence of the Appellant and the Parties as of right, which had informed the Board with letters dated 20 November 2009, 27 October 2009 and 11 January 2010, respectively, that they would not attend. At the end of oral proceedings the decision of the Board was announced.

Reasons for the Decision

1. *Admissibility of the Appeal*

- 1.1 The Notice of Appeal was filed on 23 September 2008 in the name of the opponent "IMPERIAL CHEMICAL INDUSTRIES PLC.". In the same letter it was requested that the appeal be deemed to have been filed additionally in the name of "INEOS FLUOR HOLDINGS LIMITED", since a request for transfer of opposition had already been filed, but had not yet been recorded.
- 1.2 In accordance with the decisions of the Enlarged Board of Appeal G 4/88 (OJ EPO 1989, 480) and G 2/04 (OJ EPO 2005, 549) an opposition pending before the European Patent Office may be transferred or assigned to a third party exclusively as part of the opponent's business assets, together with the assets in the interests of which the opposition was filed.
- 1.3 With letter dated 9 September 2008 the opponent "IMPERIAL CHEMICAL INDUSTRIES PLC." had requested that the opposition be transferred to "INEOS FLUOR HOLDINGS LIMITED". As evidence for the transfer a "DEED OF ASSIGNMENT OF RIGHTS IN OPPOSITION relating to the Klea business" (ASSIGNMENT) dated 9 January 2001 was submitted. This ASSIGNMENT assigns its rights, title and interest in and to the opposition to the Assignee, which is "INEOS FLUOR HOLDINGS LIMITED". As regards the business assets to be transferred this ASSIGNMENT refers to the "Master Sale and Purchase Agreement" dated 5 December 2000, which identifies the Klea business to comprise *inter alia* Arcton 402A and Arctos 402B, both being blends of chlorodifluoromethane,

pentafluoroethane and propane, and thus, lying within the interests of the opposition. However, the "Master Sale and Purchase Agreement" identifies as Parties to the Agreement only IMPERIAL CHEMICAL INDUSTRIES PLC and as "PURCHASERS" the parties VALUECLIP LIMITED, TOTALALPHA LIMITED, WEBRATE LIMITED and MAWLAW 519 LIMITED, but does neither indicate IEOS FLUOR HOLDINGS LIMITED as being a party to this "Master Sale and Purchase Agreement", nor does it contain any other evidence that the business assets relating to the Klea business have been transferred to INEOS FLUOR HOLDINGS LIMITED. As there exists a loophole in the chain of evidence the transfer of the business assets relating to the Klea business from IMPERIAL CHEMICAL INDUSTRIES PLC to INEOS FLUOR HOLDINGS LIMITED has not been demonstrated.

1.4 In the absence of any indication in the "Master Sale and Purchase Agreement", that the business assets in the interests of the present opposition(appeal) proceedings have been in fact transferred to INEOS FLUOR HOLDINGS LIMITED, the request for transfer of opposition appears not to be justified. Thus, the opponent remains "IMPERIAL CHEMICAL INDUSTRIES PLC."

1.5 Consequently, the appeal is to be regarded as having been filed only in the name of the opponent "IMPERIAL CHEMICAL INDUSTRIES PLC.", which renders the appeal admissible according to Article 107 EPC.

2. *Priority*

2.1 The patent in suit claims two priority dates, the first priority date being that of US 558 346 of 26 July 1990,

the second priority being that of US 681 565 of 5 April 1991. The Appellant cited document (2) in the proceedings as representing the closest state of the art in the assessment of inventive step. This document is an intermediate document having a publication date between the first priority date of the patent in suit, which is 26 July 1990, and the filing date thereof. Since the question arises whether document (2) is to be considered as state of the art according to Article 54(2) EPC, the matter of whether or not claim 1 of the patent in suit is entitled to the claimed right of the first priority date of 26 July 1990, has to be decided by the Board.

- 2.2 Pursuant to Article 87(1) EPC, a right of priority may only be enjoyed in respect of the same invention. Therefore, in deciding whether claim 1 of the patent in suit is entitled to the claimed priority, it needs to be decided whether in the priority document the same invention is disclosed as in present claim 1.

The requirement for claiming priority of "the same invention", referred to in Article 87(1) EPC, means that priority of a previous application in respect of a claim in a European patent (application) in accordance with Article 88 EPC is to be acknowledged only if the skilled person can derive the subject-matter of the claim directly and unambiguously, using common general knowledge, from the previous application as a whole (see decision G 2/98, OJ EPO 2001, 413).

In the present case the priority document US 558 346 relating to the priority date of 26 July 1990 discloses refrigerant mixtures being a blend of from 30 to 55

percent by weight of chlorodifluoromethane, from 35 to 65 percent by weight of pentafluoroethane and from 2 to 10 percent by weight of propane (page 9, penultimate paragraph).

However, there is no disclosure in the priority document of a composition consisting of from 30 to 65 percent by weight of chlorodifluoromethane, from 33 to 69 percent by weight of pentafluoroethane and from 1 to 10 percent by weight of propane, as defined in present claim 1.

2.3 Thus, claim 1 discloses ranges of numerical values different from those disclosed in the priority document. As the person skilled in the art cannot derive the subject-matter of claim 1 directly and unambiguously, using common general knowledge, from the previous application as a whole, it follows that the priority based on that previous application cannot be acknowledged.

2.4 The Respondent argued that although the limiting values of the ranges specified in claim 1 differed from those disclosed in the priority document, the latter ranges were comprised within those claimed in the patent in suit. Consequently, at least for the overlapping portion of the ranges the subject-matter of claim 1 was entitled to the earlier priority date of 26 July 1990.

Article 88(3) EPC stipulates that if one or more priorities are claimed, the right of priority shall cover only those elements of the European patent application which are included in the application whose priority is claimed. The expression "elements" has to

be understood as relating to separable alternative embodiments (G 2/98 OJ EPO 2001, 427, points 4. and 6.7 of the reasons). In the present case, however, the claimed amounts represent a continuum of a numerical range of values which does not correspond to distinctive alternative embodiments. Consequently, no separable alternative embodiments, i.e. elements in the sense of Article 88(3) EPC, can be identified within that continuum, which could enjoy the claim to the first priority date of 26 July 1990.

- 2.5 For these reasons, the Board concludes that the subject-matter of independent claim 1 as a whole is not entitled to the claimed priority right regarding the first priority date of 26 July 1990. Thus, the effective date for claim 1 of all requests is later than the publication date of document (2).

Consequently, document (2) is a prior art document pursuant to Article 54(2) EPC for the subject-matter of claim 1.

3. *Inventive step*

- 3.1 The patent in suit is directed to a near azeotropic composition, which is a blend of three refrigerants and is suitable to replace the refrigerant R-502. Such ternary refrigerant compositions are already known from document (2). This document represents prior art according to Article 54(2) EPC and is, thus, relevant in the assessment of inventive step (see paragraph 2.5 *supra*). The decision under appeal and both parties to the present appeal proceedings conceded that this

- document represents the closest state of the art and the Board sees no reason to depart from this finding.
- 3.2 Document (2) discloses non-flammable refrigerant compositions to substitute refrigerant R-502 (column 1, line 30; column 2, lines 29 to 34). The ternary mixture comprises chlorodifluoromethane, pentafluoroethane and propane without requiring any particular ratio of those components (claim 3).
- 3.3 Having regard to this prior art document, the Respondent submitted that the technical problem underlying the patent in suit was to provide improved refrigerant compositions, which more closely matched the characteristics of refrigerant R-502.
- 3.4 As solution to this problem the patent in suit proposes the composition according to claim 1, which is characterised by the fact that it uses the three components chlorodifluoromethane, pentafluoroethane and propane in particular amounts, namely 30 to 65 weight percent chlorodifluoromethane, 1 to 10 weight percent propane and 33 to 69 weight percent pentafluoroethane.
- 3.5 In order to support that the solution proposed by the patent in suit successfully solves the technical problem mentioned above (Paragraph 3.3 *supra*) the Respondent referred to the test report filed on 9 February 2004 before another Board in the proceedings leading to the decision T 1197/03.
- 3.5.1 This test report has neither been addressed in the present appeal proceedings, nor in the opposition proceedings leading to the decision under appeal.

Therefore, the matter arises, whether its late submission raises fresh facts on which the other parties, in particular the Appellant, have had no opportunity to comment, thereby possibly infringing its right to be heard.

However, a decision on this matter is not necessary, since this test report is not pertinent. The test report compares the discharge temperatures of various compositions comprising chlorodifluoromethane, pentafluoroethane and propane with the discharge temperature of refrigerant R-502, which is at 120°C. Compositions D2v and D2vi represented compositions according to document (2) with amounts of chlorodifluoromethane, pentafluoroethane and propane falling within the preferred range of document (2). These compositions D2v and D2vi exhibited discharge temperatures of 138 and 139°C, respectively, whereas composition iv, which represented a composition according to the patent in suit, had a discharge temperature of 140°C. As the discharge temperatures of the compositions D2v and D2vi were closer to that of refrigerant R-502 than the discharge temperature of composition iv according to the patent in suit, the test report does not show the purported improvement of the claimed invention.

- 3.5.2 According to the jurisprudence of the Boards of Appeal, alleged but unsupported advantages cannot be taken into consideration for the determination of the problem underlying the claimed invention (see e.g. decision T 20/81, OJ EPO 1982, 217, point 3 of the reasons, last sentence).

As the purported improvement relating to the closer matching of the claimed compositions to the properties of refrigerant R-502 has not been shown, the solution proposed by the patent in suit does not successfully solve the alleged technical problem (see paragraph 3.3 *supra*).

- 3.6 Consequently the problem has to be reformulated in a less ambitious way as to consist in the provision of alternative refrigerant compositions.
- 3.7 It remains to be decided whether or not the proposed solution to the objective technical problem mentioned above (see paragraph 3.6 *supra*) is obvious in view of the state of the art.
- 3.8 Document (2) describes *inter alia* in claim 3 refrigerant compositions comprising chlorodifluoromethane, pentafluoroethane and propane, without making any restrictions or limitations as to the amounts of the particular components to be used (see paragraph 3.2 *supra*). Thus, compositions containing these three components in any ratios are within the general teaching of that document. Modifying the amounts of the components in the refrigerants disclosed in claim 4 of document (2), but remaining within the general teaching of that document, was well within the routine practice of the skilled person, faced with the mere problem of providing further refrigerant compositions. Therefore, the selection of refrigerant compositions within the ambit of document (2), wherein the ratios of the three components are of from 30 to 65 weight percent chlorodifluoromethane, 1 to 10 weight percent propane and 33 to 69 weight

percent pentafluoroethane, is neither critical nor a purposive choice for solving the objective problem underlying the patent in suit, since no unexpected effect has been shown to be associated with these particular amounts.

On this basis, the arbitrary choice of particular amounts of chlorodifluoromethane, propane and pentafluoroethane within the general teaching of document (2) can only be seen as lying within the routine activity of the skilled person faced with the problem of providing alternative refrigerant compositions. Thus acting routinely, the skilled person would arrive at the claimed invention without having to exercise any inventive activity.

3.8.1 The Respondent argued that document (2) disclosed various refrigerant blends and addressed column 3, lines 8 to 12, as well as claim 4 that for mixtures of the three components chlorodifluoromethane, propane and pentafluoroethane the amounts were preferably outside the claimed ranges, namely from 65 to 75 percent by weight of chlorodifluoromethane, from 5 to 15 percent by weight of propane and from 15 to 25 percent by weight of pentafluoroethane. The skilled man did not find any pointer towards the use of amounts other than those indicated in claim 4 of document (2) and would, thus, not have considered to deviate from this teaching.

However, a pointer to the particular amounts used in present claim 1 would amount to a disclosure anticipating the subject-matter of claim 1, which is not a prerequisite for successfully attacking inventive step. The Respondent's objection that there is no

pointer to the specific amounts of chlorodifluoromethane, propane and pentafluoroethane of present claim 1 cannot convince the Board because this is asking for a condition to be met which is meaningless in a situation where the claimed solution merely consists in selecting amounts at random within the ambit of document (2), as no improvement is attributable to the use of the amounts of claim 1 over those defined in document (2).

3.8.2 The Respondent submitted that document (2) taught that non-flammability of the refrigerant compositions was achieved by using only non-flammable amounts of propane (column 2, line 27), which in a preferred embodiment were from 5 to 15 percent by weight (claim 4). The teaching of that document, however, is not confined to the subject-matter of its claim 4, but embraces any information contained therein and is thus not restricted to compositions containing the three components in the specific ratios indicated in claim 4.

3.8.3 The Respondent further argued that the azeotropic behaviour of refrigerant compositions was unpredictable. As there was no certainty of success to arrive at compositions showing near-azeotropic behaviour the skilled person would have been very cautious in modifying the amounts of the three components and would, thus, not have considered compositions having amounts of chlorodifluoromethane, propane and pentafluoroethane outside those specified in column 3, line 8 to 13 or in claim 4 of document (2).

However, when assessing inventive step it is not necessary to establish that the success of an envisaged

solution of a technical problem was predictable with certainty. In order to render a solution obvious it is sufficient to establish that the skilled person would have followed the teaching of the prior art with a reasonable expectation of success (see decisions T 249/88, point 8 of the reasons; T 1053/93, point 5.14 of the reasons; and T 318/02, point 2.7.2 of the reasons, neither published in OJ EPO).

In the present case, the Board cannot agree with the Respondent's argument that due to some purported uncertainty about the predictability of success in arriving at near-azeotropic refrigerant compositions, the skilled person would not have contemplated the claimed amounts in order to provide alternative refrigerant compositions having near-azeotropic behaviour. Document (2) describes also azeotropic refrigerant compositions (column 2, line 36) comprising chlorodifluoromethane, propane and pentafluoroethane, without specifying particular ratios to be used. It was only necessary for the skilled man to choose a ratio and to verify the near-azeotropic behaviour of the compositions by routine experimentation. Moreover, as conceded in the patent in suit compositions of chlorodifluoromethane, propane and pentafluoroethane over a very broad range yielded near-azeotropic compositions (page 4, line 55 and page 5, lines 14 to 16). Consequently, the arguments of the Respondent are not convincing.

3.9 For these reasons, the Board concludes that the subject-matter of claim 1 is obvious in the light of document (2).

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

C. Rodríguez Rodríguez

R. Freimuth