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D E C I S I O N
of 29 June 2004

Case Number: T 0050/02 - 3.3.1

Application Number: 94908493.3

Publication Number: 0687660

IPC: C07C 19/08

Language of the proceedings: EN

Title of invention:
Process for producing 1,1,1,2,2-pentafluoroethane, process for producing 2,2-dichloro-1,1,1-trifluoroethane, and method of purifying 1,1,1,2,2-pentafluoroethane

Patentee:
DAIKIN INDUSTRIES, LIMITED

Opponent:
Solvay (Société Anonyme)

Headword:
Pentafluoroethane refrigerant/DAIKIN

Relevant legal provisions:
EPC Art. 54(1)(2), 56, 123(2)

Keyword:
"Main request: inventive step (no) - juxtaposition of two known steps"
"First, second, (new) fourth, fifth, sixth auxiliary requests: amendments - supported by the application as filed (no)"
"Former third and fourth auxiliary requests: withdrawn"
"Sixth auxiliary request (version 2): inventive step (no) - juxtaposition of two known steps"
"Seventh auxiliary request: admissibility (no) - substantially modified request filed for the first time during oral proceedings raising new issues"
"Eighth auxiliary request: inventive step (yes) - non obvious solution"

Decisions cited:
G 0009/91, T 0300/86, T 0818/93, T 0840/93 T 0401/95

Catchword:
"A document is made available to the public in the sense of article 54(2) EPC if all interested parties have an opportunity of gaining knowledge of the content of the document for their own purposes, even if they do not have a right to disseminate it to third parties, provided these third parties would be able to obtain knowledge of the content of the document by purchasing it for themselves.

In relation to the two requirements stated in T 300/86 for something to be considered as being made available to the public, namely that

(i) all the interested parties must have the opportunity of gaining knowledge of the content of the document,

(ii) however unrestricted by contractual or other legal restrictions on use or dissemination of the information therein

this Board considers that only the first is acceptable, but that the second requirement is too broadly formulated, and not justified by the phrase "made available to the public" in Article 54(2) EPC.

The Board sees the essence of the requirement in Article 54 EPC 'being made available to the public' as the information being available to any interested person, who having once obtained the information should then be free to exploit the information for his own purposes in an industrial application. It is not necessary that this information be supplied free of charge, or that the recipient should be entitled to disseminate it to all and sundry, provided others can obtain

the information for themselves from the original source" (cf. points 2.5.2 and 2.5.3).

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Case Number: T 0050/02 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal 3.3.1
of 29 June 2004

Appellant: (Proprietor of the patent)	DAIKIN INDUSTRIES, LIMITED Umeda Center Building, 4-12, Nakazaki-nishi 2-chome Kita-ku Osaka-shi Osaka 530 (JP)
Representative:	Hoffman Eitle, Patent- und Rechtsanwälte Arabellastrasse 4 D-81925 München (DE)
Respondent: (Opponent)	Solvay (Société Anonyme) Rue du Prince Albert, 33 B-1050 Bruxelles (BE)
Representative:	Jaques, Philippe Solvay S.A. Département de la Propriété Industrielle Rue de Ransbeek, 310 B-1120 Bruxelles (BE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 22 November 2001 revoking European patent No. 0687660 pursuant to Article 102(1) EPC.**

Composition of the Board:

Chairman: A. J. Nuss
Members: P. F. Ranguis
S. C. Perryman

Summary of Facts and Submissions

I. The Appellant (Proprietor of the patent) lodged an appeal against the decision of the Opposition Division to revoke the European patent No. 0 687 660 (European patent application No. 94 908 493.3) pursuant to Article 102(1) EPC on the ground that its subject-matter did not involve an inventive step.

II. The European patent contained ten claims. Independent Claim 1 (the sole independent claim) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C. and a second reaction region wherein 2,2-dichloro-1.1.1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region".

III. The opposition sought revocation of the patent in suit under Article 100(a) (lack of inventive step), (b) and (c) EPC. In support of the lack of inventive step, several documents were cited including

(1) EP-A-349 298

(2) SRI International, a private report by the Process Economics Program, Report No. 201 - Chlorofluorocarbon alternatives (January 1991) - Abstract and pages 6-5 to 6-6

(3) EP-A-456 552

IV. In its decision, the Opposition Division held that the subject-matter of Claim 1 did not give rise to objections under Article 100(c) EPC and that the patent in suit disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. However, the Opposition Division held that the subject-matter of Claim 1 was obvious in view of the disclosure of document (3), the closest state of the art, in combination with the disclosure of document (2), as resulting from a mere juxtaposition of the two process stages disclosed in those documents.

V. Oral proceedings before the Board took place on 29 June 2004. In addition to the main request to set aside the decision of the Opposition Division and to maintain the patent as granted, the Appellant submitted eight auxiliary requests.

VI. The first and second auxiliary requests were filed with the letter received on 29 April 2004.

Claim 1 of the first auxiliary request (the sole independent claim) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region, and
wherein the gases produced in the first reaction region flow in the second reaction region after at least unreacted perchlorethylene is removed from the gases."

Claim 1 of the second auxiliary request (the sole independent claim) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride

in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region, and
wherein the gases produced in the first reaction region flow in the second reaction region after at least unreacted perchlorethylene and hydrogen chloride are removed from the gases."

VII. The third and fourth auxiliary requests submitted with the letter received on 29 April 2004 were withdrawn and replaced by a new fourth auxiliary request submitted with the letter received on 18 June 2004. Claim 1 (the sole independent claim) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region, and
wherein the gases produced in the first reaction region flow in the second reaction region after compounds

unnecessary for the second reaction region including unreacted perchlorethylene and hydrogen chloride are removed from the gases."

VIII. The fifth auxiliary request was submitted with the letter received on 29 April 2004. Claim 1 (the sole independent claim) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region, and
wherein reaction gases flow continuously from the first reaction region in the second reaction region and HCl formed in the first reaction region and unreacted perchlorethylene are removed between the first and second reaction region by a distillation column."

IX. The sixth auxiliary request was submitted with the letter received on 29 April 2004. Claim 1 (the sole independent claim) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region, and
wherein reaction gases flow continuously from the first reaction region in the second reaction region and unnecessary gases for reaction including HCl formed in the first reaction region and unreacted perchlorethylene are removed by distillation columns (a) between the first and second reaction region and (b) after the second reaction region or by a common distillation column being installed between the first and second reaction regions to ensure that the raw and produced gases of each reaction region enter and leave the column."

X. Three other auxiliary requests were submitted during the oral proceedings as sixth, seventh and eighth auxiliary requests, leading to two auxiliary requests being designated as "sixth" (cf. point IX above), one submitted with the letter of 29 April 2004 and the other during the oral proceedings.

Claim 1 (the sole independent claim) of the sixth auxiliary request submitted on 29 June 2004 (version 2) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.49 MPaG(5 kg/cm^{2}G) and 1.47 MPaG (15 kg/cm^{2}G) and at a temperature between 200°C and 450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.294 MPaG (3 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region, and wherein the temperature in the first reaction region is lower than in the second reaction region."

Claim 1 (the sole independent claim) of the seventh auxiliary request read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure between 0.49 MPaG (5 kg/cm^{2}G) and 1.47 MPaG (15 kg/cm^{2}G) and at a temperature between 200°C and

450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.294 MPaG (3 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region, and using in the first and second reaction region a chromium oxide catalyst having a surface area not less than 170 m^2/g or a catalyst comprised of chromium oxide with a surface area not less than 170 m^2/g and at least one element chosen from Ru and Pt, wherein the temperature in the first reaction region is lower than in the second reaction region."

The eighth auxiliary request was originally submitted as seventh auxiliary request with the letter received on 29 April 2004. Due to the correction of a clerical error, it was resubmitted during the oral proceedings as eighth auxiliary request. Claims 1 and 5 (the sole independent claims) read as follows:

"1. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapour phase in the presence of a catalyst under a pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in

the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region,
wherein a common distillation column is installed between the first and second reaction regions to ensure that the raw and produced gases of each reaction region enter and leave the column,
and gases drawn from a part comprised mainly of perchloroethylene in the distillation column and hydrogen fluoride are introduced into the first reaction region under higher pressure, and then all or a part of the reacted gases from said first reaction region are returned to said distillation column, gases drawn from a part comprised mainly of 2,2-dichloro-1,1,1-trifluoroethaneand/or mainly of 2-chloro-1,1,1,2-tetrafluoroethane in said distillation column are introduced into the second reaction region under lower pressure after being supplemented with hydrogen fluoride, if necessary, then reacted gases from said second reaction region are pressurized, after which all or part of them are liquefied, or in the gas state as they are, or in both states, and returned to said distillation column, while a gas containing 1,1,1,2,2,-pentafluoroethaneis drawn from said distillation column".

"5. A method of producing 1,1,1,2,2-pentafluoroethane in which reactions are conducted in two reaction regions comprising a first reaction region wherein perchloroethylene reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a

pressure between 0.294 MPaG(3 kg/cm^{2}G) and 2,94 MPaG (30 kg/cm^{2}G) and at a temperature between 200°C and 450°C, and a second reaction region wherein 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane contained in the gases produced in the first reaction region reacts with hydrogen fluoride in a vapor phase in the presence of a catalyst under a pressure of not more than 0.49 MPaG (5 kg/cm^{2}G) and at a temperature between 250°C and 500°C, said first reaction region being kept at a higher pressure than said second reaction region,
wherein independent distillation column are installed before and behind the second reaction region with low pressure,
in which the operations are conducted wherein all or a part of the reacted gases from the first reaction region with high pressure are introduced into the first distillation column that is installed in front of the second reaction region, gases are then drawn from an area in said first distillation column where organic compounds are comprised mainly of 2,2-dichloro-1,1,1-trifluoroethane and/or of 2-chloro-1,1,1,2-tetrafluoroethane to be introduced into said second reaction region after adding hydrogen fluoride, if necessary, gases drawn from an area where organic compounds are mainly comprised of perchloroethylene are introduced with additional perchloroethylene into said first reaction region in a gas condition after HF is added, if necessary, all or a part of the reacted gases from said second reaction region are introduced into the second distillation column, gases are then drawn from an area in the distillation column where organic compounds are mainly comprised of 1,1,1,2,2-pentafluoroethane, while gases drawn from an area where

the organic compounds are mainly 2,2-dichloro-1,1,1-trifluoroethane and/or 2-chloro-1,1,1,2-tetrafluoroethane are returned to said second reaction region after hydrogen fluoride is added, if necessary."

XI. The arguments of the Appellant in the written proceedings and during the oral proceedings may be summarized as follows:

Document (2) was not prior art under Article 54(2) EPC since it was not accessible to an unlimited number of persons, free to dispose of the technical information contained therein, as evidenced by

(a) the title of that document, i.e. "a private report by the Process Economic program",

(b) document (8), the SRI Home page on internet (not dated), indicating that "most studies and reports published by SRI are written under contract for our clients and, as a result, are not available to the public",

(c) the confidentiality agreement attached to each offer of PEP reports, i.e. documents

(6) "Proposal for Introductory Offer, Process Economics program 1993",

(7) "Proposal for Introductory Participation in the 2003 Process Economics Program Yearbook Option

(12) "Proposal for Process Economics Program PEP'91 Series".

(d) the "partnership" established between SRI and PEP subscriber as shown by document

(11) 2003 SRI Consulting, Subscription or Single Report Inquiries,

(e) the entire discretion with which SRI could allow or not the purchase of a report as shown by document

(16) e-mail from PEP SRI Consulting dated 3 June 2004

The access to document (2) was, therefore, deliberately restricted to certain persons linked by a confidentiality agreement, thus (i) not all the interested parties had the opportunity of gaining knowledge of the content of the document, (ii) the confidentiality clause represented a contractual restriction on use or dissemination of the information contained in PEP reports. The decisions T 300/86 (cf. points 2.1 and 2.5) and T 818/93 were cited in that respect.

Furthermore, the Respondent (Opponent) had provided an incomplete copy of document (2) not sufficient for understanding and correctly evaluating its disclosure.

In case the Board would admit that document into the proceedings, the following was submitted in support of

the inventive step of the subject-matter of Claim 1 of the main request:

In view of document (3) as the closest state of the art, the technical problem to be solved was to provide a process for preparing 1,1,1,2,2-pentafluoroethane (HFC-125) that can attain a high conversion of perchloroethylene while avoiding catalyst degradation in the second stage of the reaction and minimizing the production of 1-chloro-1,1,2,2,2-pentafluoroethane (CFC-115) as a by-product.

It was true that the reaction disclosed in document (3) corresponded to the second reaction as defined in Claim 1 (cf. point II above). However, document (3) was silent regarding the influence of the pressure and a skilled person would have concluded that the selectivity of HCFC-124 and HCFC-125 depended on other factors than pressure. That the pressure was not critical was confirmed by document

(5) US-A-4 843 181

cited as a source of information in document (2).

At most, the person skilled in the art starting from document (3), looking for an integrated process to prepare HFC-125, would have been directed to use the process disclosed in document

(1) EP-A-0 349 298

which taught that the desired starting materials of the process of document (3), i.e. HCFC-123 and/or HCFC-124,

could be obtained with a very high yield when using a pentahaloethane as a starting material. Such a combination, however, did not give any incentive to the skilled person to design a HFC-125 process with two reaction regions and starting from perchloroethylene under conditions that the first reaction region was kept at higher pressure than the second reaction region.

It was only with hindsight that the person skilled in the art would have combined the teaching of document (2) with that of document (3) since document (3) noted that it was difficult to obtain F-124 and in particular F-125 with good yields by direct fluorination of tetrachloroethylene (PCE) and the state of the art properly construed showed that many alternatives, including reactions starting from trichloroethylene, were offered to the skilled person for preparing HFC-125 as shown by document

(9) Measure for Flon/Halon issues 89" (Nobuo Ishikawa ed. CMC Co. Ltd., Japan, June 1989, page 192) and English translation of Table 12.

Regarding the subject-matter of Claim 1 of the first, second, fourth and fifth and sixth auxiliary requests, the latter submitted with the letter of 29 April 2004, the description of the application as originally filed made clear that the removal of perchloroethylene and HCl, optionally in a continuous flow of gases from the high pressure to the low pressure reaction stage, was not linked to any specific technical context and, therefore, could be the object of a generalization without infringing the requirement of Article 123(2) EPC.

Regarding the inventive step of the sixth auxiliary request (submitted at the oral proceedings), the same rationale as submitted for Claim 1 of the main request applied.

Regarding the seventh auxiliary request, the subject-matter of Claim 1 did not give rise to objection under Article 100(b) EPC in view of the description of the patent in suit which referred to previous European patents disclosing chromium-oxide catalysts having a surface area of not less than $170m^2/g$ and their method of preparation.

Regarding the eighth auxiliary request, the prior art as a whole did not render obvious the subject-matter of Claim 1. Document (2) was, in that respect, too incomplete for a teaching to be derived therefrom.

XII. The arguments of the Respondent in the written proceedings and during the oral proceedings may be summarized as follows.

Regarding the accessibility to the public of the document (2), documents

(10) Process Economics Program Report 201 "Chlorofluorocarbons Alternatives 201",

from the present web site of SRI,

(13) e-mail from PEP SRI Consulting dated 21 June 2004 addressed to Mr Mross of Solvay,

(14) Single Report Order Form offering a price of 6000 US Dollars for the purchase of the PEP Report 201 "Chlorofluorocarbon Alternatives" attached to the e-mail (13),

(15) Abstract and table of content of the report No. 201 attached to the e-mail (13)

showed that document (2) was available to any interested parties subject to payment of the required sum.

The confidentiality agreement which accompanied any purchase of PEP reports serve merely as a safeguard of SRI's financial interests. This restriction was not fundamentally different of those which protected any information from reproduction without the authorization of the provider.

Regarding inventive step of Claim 1 of the main request, the person skilled in the art, starting from document (3) which disclosed the preparation of HFC-125 from HCFC-123, the second step of the claimed process, and seeking to prepare HFC-125 from perchloroethylene, would have been directed to the teaching of document (2) which disclosed the production of HCFC-123 from perchloroethylene according to the first step of the claimed process. The claimed invention was merely a juxtaposition of reaction steps disclosed in document (2) and (3) without any synergistic effect.

All the auxiliary requests were late-filed and should not be admitted into the proceedings.

It was, furthermore, pointed out that the subject-matter of Claim 1 of the first, second, fourth, auxiliary requests comprised any removal means of unreacted perchloroethylene, HCl or unnecessary gases whereas the application as originally filed restricted that removal to a distillation column.

The amendments present in Claim 1 of the fifth and sixth auxiliary requests (submitted with the letter of 29 April 2004) combined two incompatible parts of the description. If the gases flowed continuously from the first reaction region into the second reaction region, then HCl and perchloroethylene were necessarily introduced into the second reaction region.

The subject-matter of Claim 1 of the sixth auxiliary request submitted at the oral proceedings did not involve an inventive step for the same reasons as the subject-matter of Claim 1 of the main request.

The subject-matter of Claim 1 of the seventh auxiliary request submitted during the oral proceedings before the Board raised questions about its compliance with the requirement of Article 83 EPC. That request should be rejected for being late filed.

The subject-matter of Claims 1 and 5 of the eighth auxiliary request submitted during the oral proceedings before the Board comprised well-known separation and recycling operations obvious for the person skilled in the art.

XIII. The Appellant requested that the decision under appeal be set aside and that the patent be maintained as main

request as granted, or as auxiliary requests on the basis of the set of claims filed respectively as first or second auxiliary request on 29 April 2004, as fourth auxiliary request on 18 June 2004, as fifth or sixth auxiliary request on 29 April 2004, or as sixth, seventh or eighth auxiliary request submitted at the oral proceedings on 29 June 2004.

The Respondent requested that the appeal be dismissed.

XIV. At the end of the oral proceedings the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Prior art under Article 54(2) EPC*

2.1 The Appellant disputed in the appeal proceedings that document (2) was prior art under Article 54(2) EPC, in substance on the ground that this document was not available to all interested parties and that any party having gained knowledge of the information contained therein was obliged by a contractual agreement to keep the said information secret. The Respondent, to the contrary, contended that any interested parties could gain knowledge of the information contained in document (2) and that the restriction on dissemination provided by the confidentiality agreement served merely as an additional safeguard of SRI's financial interests.

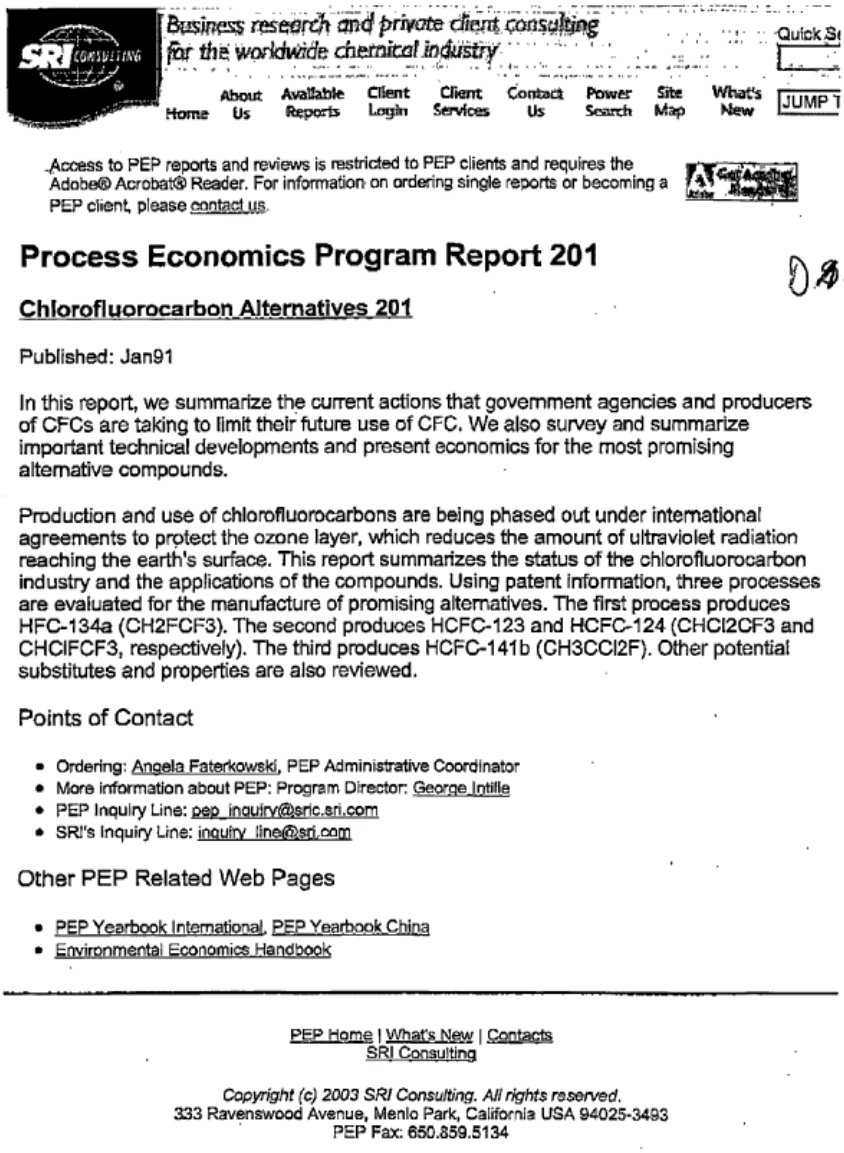
Numerous documents were cited by both parties in that respect.

2.2 Document (2) was relied on by the Respondent in the form of a copy having on its front page the words "SRI International, Report No. 201, CHLOROFLUOROCARBON ALTERNATIVES, Earl D. OLIVER, January 1991. A private report by the PROCESS ECONOMICS PROGRAM, Menlo Park, California 94025".

2.3 The first question to be decided is whether document (2), a report by the PROCESS ECONOMICS PROGRAM, was offered to all interested parties.

2.3.1 First, that the report is referred to as a private report cannot be taken, as argued by the Appellant, as indicative that it was not made publicly available as the word "private" might be referring merely to the report not being publicly funded.

2.3.2 Document (10) provided by the Respondent extracted from the present web site of SRI appears as follows (apart from the hand-written reference "D10", added by the Respondent):



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Process Economics Program Report 201

D80

Chlorofluorocarbon Alternatives 201

Published: Jan91

In this report, we summarize the current actions that government agencies and producers of CFCs are taking to limit their future use of CFC. We also survey and summarize important technical developments and present economics for the most promising alternative compounds.

Production and use of chlorofluorocarbons are being phased out under international agreements to protect the ozone layer, which reduces the amount of ultraviolet radiation reaching the earth's surface. This report summarizes the status of the chlorofluorocarbon industry and the applications of the compounds. Using patent information, three processes are evaluated for the manufacture of promising alternatives. The first process produces HFC-134a (CH2FCF3). The second produces HCFC-123 and HCFC-124 (CHCl2CF3 and CHClFCF3, respectively). The third produces HCFC-141b (CH3CCl2F). Other potential substitutes and properties are also reviewed.

Points of Contact

- Ordering: Angela Faterkowski, PEP Administrative Coordinator
- More information about PEP: Program Director: George Intille
- PEP Inquiry Line: pep_inquiry@sric.sri.com
- SRI's Inquiry Line: inquiry_line@sri.com

Other PEP Related Web Pages

- PEP Yearbook International, PEP Yearbook China
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333 Ravenswood Avenue, Menlo Park, California USA 94025-3493
PEP Fax: 650.859.5134

It is clear that this advertising page edited by SRI Consulting refers to document (2) which, therefore, could be ordered by contacting the PEP Administrative Coordinator.

2.3.3 It is true that document (8), the SRI Home page on internet having the title "SRI Publications" preceded by the mention "Find SRI Reports and Publications", shows, as set out below, that some reports are available to the public, some others not:

"SRI teams publish their insights and findings as part of our ongoing work. While most studies and reports published by SRI are written under contract for our clients and, as a result, are not available to the public, some materials are available on line. We've included links to some of the most requested (and publicly available) publications. Please contact us for permission to quote material from SRI publications.

Key areas to check for SRI publications and reports:

Publication Resources - Includes education and policy, and information and computing sciences
SRI Consulting (chemical business services)
SRI Consulting Business Intelligence
SRI - Authored Books and Reports
Search - If you know of a specific article, book or report, or know who the author is, try our search engine".

However, since document (10) forms part of the publications of SRI Consulting mentioned in document (8) as publicly available, there is no doubt that document (2) could be ordered by anyone interested in that technology and, therefore, was offered to all interested parties.

2.3.4 The finding that document (2) could be ordered by any interested party is corroborated by documents (13), (14) and (15).

Document (13) is an e-mail from SRI Consulting in response to an order of the Respondent reading as follows:

"Thank you for your interest in the Process Economics Program of SRI Consulting, PEP Report 201 "Chlorofluorocarbon Alternatives" is available on an individual basis for 6 000 US Dollars. Please find attached the abstract and table of contents of this report for perusual *[document (15), note of the Board]*. Please feel free to review these documents in further determining your interest in purchasing this report.

For ordering convenience, I have attached a single report order *[i.e. document (14) mentioning the price of 6 000 US Dollars, in front of the line "PEP Report 201 "Chlorofluorocarbon Alternatives, note of the Board]* which you may print, complete and fax for my attention at 281-876-6947. Upon receipt of the completed order form, the report and invoice will be shipped via courier to the location indicated."

That finding cannot be rebutted by Document (16) submitted by the Appellant. Document (16) is an e-mail from SRI Consulting in response to a query of the Appellant reading as follows:

"It might have been possible for competitors of our clients to purchase the report but the purchase is linked to certain conditions. These are primarily related to our concerns about protecting our proprietary intellectual property content of the report from wider uncontrolled dissemination. In other words, it may be possible for a competitor of our client to purchase the report but it would be difficult for a competitor of SRI to purchase a report.

The decision to allow purchase is at out discretion not the clients and the decision is made on a case by case basis, generally at the discretion of the SRI program director responsible for the report as well as the conditions explicitly described in the contract".

Contrary to the opinion expressed by the Appellant, the restriction is not substantial as it does not apply to the firms exercising industrial activities in that technical field, i.e. the interested chemical firms, but to competitors of SRI, i.e. Research Institutes receiving subsidies from the sale of the research works. That any chemical firm or any interested individual may purchase document (2) is confirmed by document (10) above cited and the second part of document (16), the query by e-mail of the Appellant to SRI, which starts by the sentence "Thank you again for sending us the subscription form." and proves that the Appellant had also received a positive response regarding the provision of the report.

2.3.5 Regarding the argument of the Appellant that the price of the report (6 000 US Dollars) would be too high to render it available to any interested parties, the Board would like to note that such an economic argument is in any case not relevant. A machine offered for sale at whatever price is available to the public even though only some industrial firms could afford to purchase it. This applies to any technical information the price of which is normally adapted to the market.

2.4 The Appellant submitted, furthermore, evidence intended to show that a confidentiality agreement linked to any purchase of document (2) would have rendered that

document not available to the public in the sense of Article 54(2) EPC.

2.4.1 The Appellant argued in that respect that document (11) showed that PEP was designed to be a problem-solving partnership, combining independent analysis with client needs. The partnership between SRI and its subscribers involved elements of business relationship resulting in an obligation for the parties to secrecy. The decision T 818/93 was cited in that respect. This was, furthermore, apparent from the proposals for PROCESS ECONOMICS PROGRAM submitted as documents (6), (7) and (12) which all comprised a clause of confidentiality reading as follows:

"The information disclosed in the PEP reports and other PEP publications is for the sole and confidential use of the PEP clients and affiliates in which the client's ownership is 100%. By acceptance of this proposal, the client agrees to take reasonable precautions to ensure that the PEP material is: (1) not reproduced or published, in whole or part; and (2) not made available to third parties except for temporary and specific use for the sole benefit of the client in the client's own research or commercial activities. However clients or SRI Consulting may donate any PEP report 15 years old or older to any university for exclusive use by the faculty for educational purposes only. The editor of the Process Economics Program shall be notified of each such client donation."

2.4.2 However, regarding document (11), the "partnership" depicted by that document does not relate to the sold report itself but to some additional advantages not

directly related to this report that the client can obtain by subscribing, such as the right to vote on the reports that will be covered in the years later on, updates to the plant equipments of SRI, confidential consultation on recent developments in previously evaluated chemical processes, as well as additional details about processes and costs estimates covered in PEP reports. In that respect, the fact that the clients would gain a competitive edge by using PEP reports can merely be seen as a commercial approach to invite the interested persons to subscribe.

The situation is, therefore, quite different from that which prevailed in the decision T 818/93. In that case, the disclosure at dispute had been proposed to several companies in an attempt (unsuccessfully) to interest them in developing and funding research for the intraluminal graft. Such a business relationship where technical information is revealed to bring a project to a successful conclusion with a partner, as was the case in the above cited decision, normally oblige the said partner not to use the information if the negotiations fail, which is not the case here in view of the sentence "for the sole benefit of the client in the client's own research or commercial activities" (cf. point 2.4.1 above, in particular, documents (6), (7) and (12). From this sentence, it can also be concluded that the concern of SRI about protecting its intellectual property right (cf. point 2.3.4 above) does not amount to a will to forbid any exploitation but, rather, to receive a reward for each communication of the information.

2.5 Although this Board has found that the document was available to all interested parties (cf. point 2.3 above) and that it results from the confidentiality clause that the purchaser of document (2) can use the report for its commercial activities (cf. point 2.4.1), it remains true that the confidentiality clause bars any dissemination of the document other than for the benefit of the purchaser's research or commercial activities.

2.5.1 The Board is aware in that respect of the decision T 300/86, cited by the Appellant, which states that "if access to a document is deliberately restricted to certain persons it is by that token not available to the public, even if the group of persons able to gain knowledge of the content of the document is large" (cf. point 2.5 of the reasons) and that the preconditions for public availability are that

"(i) all the interested parties must have the opportunity of gaining knowledge of the content of the document,

ii) however unrestricted by contractual or other legal restrictions on use or dissemination of the information therein. Otherwise the document has not been made available to the public" (cf. point 2.1 of the reasons).

2.5.2 However, this Board considers that only the first is acceptable, but that the second requirement is too broadly formulated, and not justified by the phrase "made available to the public" in Article 54(2) EPC. This Board holds that it is enough for all interested parties to have an opportunity of gaining knowledge of

the content of the document for their own purposes, even if they do not have a right to disseminate it to third parties, provided these third parties would be able to obtain knowledge of the content of the document by purchasing it for themselves, as the Board finds is the case here. On this Board's view of the law, the outcome in case T 300/86 would still be the same, as in that case it was found that not all interested parties had an opportunity of gaining knowledge of the information.

2.5.3 The second requirement above stated seems to have originated from a questionable extrapolation from cases where on the evidence it had been shown that one person, not the author, had been given a document unrestricted by contractual or other legal restrictions on use or dissemination of the information therein, and in such cases it was accepted that the document had thereby been made available to the public. That the absence of any restriction on dissemination was a sufficient condition for a finding of the information so being made available to the public, does not mean that it is a necessary condition for such a finding. The Board sees the essence of the requirement in Article 54 EPC 'being made available to the public' as the information being available to any interested person, who having once obtained the information should then be free to exploit the information for his own purposes in an industrial application. It is not necessary that this information be supplied free of charge, or that the recipient should be entitled to disseminate it to all and sundry, provided others can obtain the information for themselves from the original source.

Indeed, the dissemination of much technical information on various supporting media such as papers, Compact Discs or through Internet is restricted to the sole use of the purchaser and any breach of that requirement is strictly forbidden. It is nevertheless the case that this information is available to the public, given the fact that they are offered to any interested parties and the information content can be used for their benefit. The sole reason for such restriction on the dissemination of the information is that the provider wants to receive a reward for each communication of the information.

2.5.4 In the present case, the PEP report was offered to all interested parties (cf. point 2.3 above). The purchaser could use the information for its own purposes (cf. point 2.4.1 above). The restriction on the dissemination in the form of the confidentiality agreement (cf. point 2.4.1 above) is primarily related to concerns about protecting intellectual property right of the proprietor (cf. 2.3.4 above) who in the present case wishes to receive a reward for each communication of the information (cf. 2.4.2 above).

2.6 It is, therefore, the conclusion of the Board that such a restriction does not affect the availability to the public of the document (2) since it is in keeping with the general pattern of technical information available to the public subject to payment.

3. *Novelty - Article 54(2) EPC*

3.1 None of the prior art cited discloses a two step process starting from perchloroethylene to prepare

HFC-125 as defined in Claim 1 of the patent in suit. The patent subject-matter is, therefore, novel. This was not contested by the Respondent.

4. *Article 56 EPC - Inventive step*

4.1 The patent in suit as reflected by Claim 1 relates to a method of producing 1,1,1,2,2-pentafluoroethane (HFC-125) in a two step process involving, first the fluorination of perchloroethylene, and then the fluorination of the HCFC-123 and HCFC-124 contained in the gases produced to get the HFC-125 (cf. point II above).

4.2 In accordance with the "problem-solution approach" to asses inventive step, it is necessary to establish the closest state of the art to determine in the light thereof the technical problem which the invention addresses and solves. The "closest prior art" is normally a prior art document disclosing subject-matter aiming at the same objective as the claimed invention and having the most relevant technical features in common. In particular, where a claimed invention relates to a process for manufacturing a known product as is the case here, then the closest state of the art is confined to documents describing that compound and its manufacture (cf. Case Law of the Boards of Appeal of the European Patent Office, 4th edition 2001, I.D.3.6).

4.2.1 Document (3) is the sole document of the prior art cited which discloses a process for manufacturing 1,1,1,2,2-pentafluoroethane (HFC-125). According to the disclosure of that document, 2-chloro-1,1,1,2-

tetrafluoroethane (HCFC-124) and 1,1,1,2,2-pentafluoroethane (HFC-125) are obtained by gas phase catalytic fluorination of at least one pentahaloethane, in particular, 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123), in a temperature range between 250°C and 470°C, preferably between 280°C and 410°C, at an atmospheric or higher pressure, by means of hydrofluoric acid, in presence of a chromium catalyst, in particular in the form of chromium(III) oxide (cf. page 1, lines 3 to 6; page 3, line 4, lines 15 to 18, lines 36 to 38 and 54 to 56). To orient the reaction to the preparation of HCFC-124, it is preferable to work in the lower zone of the temperature range (300-330°C) whereas a higher temperature yields HFC-125 (cf. page 3, lines 38 to 40). The HCFC-123, HCFC-124 and other under fluorinated compounds may be recycled to the reactor to increase the productivity of HFC-125 (cf. page 4, lines 4 to 6). The Examples and the Table of results show that, at 350°C, for the fluorination of HCFC-123 in presence of chromium dioxide in the trivalent state, the conversion rate of HCFC-123 is 90.4% and the resulting mixture comprises, in particular: HFC-125 78.8%, HCFC-124 17.7% and 1-chloro-1,1,2,2,2-pentafluoroethane (CFC-115) 0.4% (cf. Example No. 1)). At 300°C, the conversion rate of HCFC-123 is 49.2% and the resulting mixture comprises, in particular: HFC-125 10%, HCFC-124 87.8% and 1-chloro-1,1,2,2,2-pentafluoroethane (CFC-115) 0.1% (cf. Example No. 3)). The catalytic activity was perfectly preserved in the long run (cf. page 5, lines 46 to 47). It is not disputed that this reaction discloses the second step of the claimed process (cf. point II above) and that the process as disclosed in document (3) aims at preparing, in particular, the HFC-125.

4.2.2 The Board considers, therefore, in agreement with both parties, that document (3) represents the closest state of the art and, thus, the starting point in the assessment of inventive step.

4.3 In the next step, the technical problem which the invention addresses in the light of the closest state of the art is to be determined.

4.3.1 Relying upon the statement in document (3) that from the technical state of the art, it seemed difficult to prepare both desired compounds (HCFC-124 and HFC-125) with a good selectivity and high productivity by direct fluorination of perchloroethylene (cf. page 2, lines 41 to 42), the Appellant submitted that the technical problem to be solved in view of said document (3) was to provide a process for manufacturing HFC-125 which could attain a high conversion of perchloroethylene, a high efficiency/selectivity in the HFC-125 production, while minimizing the production of CFC-115 and wherein the catalytic deterioration was minimized.

4.3.2 However, the Board observes that the manufacture of HFC-125 according to Claim 1 is exclusively performed during the second fluorination step which is the same as that of document (3). The examples of document (3) show that the fluorination step from HCFC-124 to HFC 125 is highly dependent on the temperature, namely at 300°C, a temperature within the definition of the claimed invention, the yield of HFC-125 is low, i.e. 10%, the selectivity being in favour of HCFC-124 (cf. point 4.2.1 above). Under those circumstances, the technical problem as formulated by the Appellant (cf.

point 4.3.1 above) is not credibly solved within the whole scope of Claim 1, since the efficiency/ selectivity in the HFC-125 production may be very low depending on the temperature of the reaction.

4.3.3 Thus, in view of the above considerations, the technical problem must be redefined as being the provision of an alternative process for manufacturing HFC-125.

4.4 In view of the Example 1 of the patent in suit, the Board is satisfied that the technical problem is solved.

4.5 It remains to be decided whether or not the claimed invention was obvious in view of the cited prior art.

4.5.1 Starting from document (3), the person skilled in the art would have noted that it was difficult to prepare HFC-125 by performing the direct fluorination of perchlorethylene (cf. page 2, lines 39 to 40 and point 4.3.1 above). That finding nevertheless does not mean that any preparation of HFC-125 from perchloroethylene is impossible but simply that the direct fluorination of perchloroethylene is not recommended.

4.5.2 Document (2) in Table 6.2 describes the experimental conditions for preparing HCFC-123 and HCFC-124 from a perchloroethylene/HF feed in a one-step process by explicit reference to document (5). The teaching of document (5), far from contrasting with the disclosure of document (2) is, in fact, a proper support which allows a perfect understanding of the conditions detailed in Table 6.2 of document (2).

4.5.3 Indeed, document (5) describes the preparation of HCFC-123, the starting product of document (3), or HCFC-124 by fluorination of perchloroethylene with HF, in presence of Cr_2O_3, at a temperature of about 225°C to about 400°C, with a contact time most preferably about 15 to 90 seconds. Pressure is not critical. Atmospheric and superatmospheric pressures are the most convenient and are therefore preferred (cf. column 2, lines 20 to 27, line 42, line 51, column 3, lines 66 to column 4, line 2 and column 4, lines 47 to 49). The reactions of all the examples are performed at atmospheric pressure. At 225°C, 98.3% of perchloroethylene can be converted and a mixture comprising 78.3% of HFC-123, the starting product of document (3), is obtained (cf. Table, Example 6).

4.5.4 Document (2) gives details of experiments performed by the SRI research team based on the teaching of document (5). Perchloroethylene is fluorinated at 250°C with a contact time of 40 seconds, at a pressure of 100 psig (0.69 MPaG), with HF, in presence of Cr_2O_3. 98.8% of perchloroethylene is converted and the produced mixture comprises 90% of HCFC-123/HCFC-124 (ratio 88/12 by weight).

4.5.5 As can be seen, from the comparison between both documents, the experimental data disclosed in document (2) are fairly in line with the teaching of document (5) and, if necessary, the person skilled in the art could have had looked at document (5) to complete his understanding of document (2). For that reason, the Board cannot concur with the Appellant's contention that the disclosure of document (2) would be incomplete

on the ground that the whole report No. 201 had not been submitted. Any party is free to submit the evidence he wishes to defend his cause. Since the Board considers that document (2) is a complete disclosure **with respect to** the subject-matter of Claim 1 of the main request, there was no need of additional information.

4.5.6 Furthermore, from the experimental data recited in Table 6.2 of document (2), there is an unambiguous disclosure of the first process stage since the process of document (2) is performed at a pressure of 0.69 MPaG and at a temperature of 250°C.

4.5.7 Since document (3) discloses a method of preparation of HFC-125 from HCFC-123 according to the second stage of the process of Claim 1 and since document (2) discloses a method of preparation of HCFC-123 according to the first step of the claimed process, it would have been obvious for the skilled person to use as a method of preparation of HCFC-123 involved in the process of document (3), the teaching of document (2) and, therefore, achieve without inventive ingenuity a process within the scope of Claim 1 of the present request. The subject-matter of Claim 1 turns out to be the result of a simple juxtaposition of two steps well-known in the art which leads to the expected HFC-125 and for that reason does not involve an inventive step.

4.5.8 The citation of document (9) cannot rebut that finding since the problem-solution approach requires one to start from the closest prior art. To submit a document showing that many routes were explored before the filing date of the claimed invention cannot help to

support inventive step unless it shows that there was a prejudice or at least a deterrent against the route of the invention. This is not the case here.

4.6 Since the Board can only decide on a request as a whole, the main request must be refused.

First, second and fourth auxiliary requests

5. *Article 123(2) EPC - Amendments*

5.1 The subject-matter of Claim 1 of the first, second and fourth auxiliary requests have in common that the gases produced in the first reaction region flow into the second reaction region after perchloroethylene (first auxiliary request) or perchloroethylene and hydrogen chloride (second and fourth auxiliary requests) are removed from the gases (cf. points VI and VII above).

5.2 However, the sole means disclosed in the application as originally filed for removing perchloroethylene and hydrogen chloride is a distillation column (cf. page 11, lines 9 to 11). The generalization of this specific means, i.e. a distillation column, to any removal means is an inadmissible extension of the disclosure which contravenes the requirement of Article 123(2) EPC.

5.3 The first, second and fourth auxiliary requests must, therefore, be refused.

Fifth auxiliary request

6. *Articles 123(2) EPC - Amendments*

6.1 The subject-matter of Claim 1 of this request provides that the reaction gases flow continuously from the first reaction region into the second reaction region and HCl formed in the first reaction region and unreacted perchlorethylene are removed between the first and second reaction region by a distillation column (cf. point VIII above.

6.2 However, it derives from the application as originally filed that when the reaction gases flow continuously from the high-pressure-reaction stage to the low-pressure-reaction stage, the HCl and the perchloroethylene formed in the high-pressure-reaction stage flow into the low-pressure-reaction stage and cause an adverse effect on the fluorination reaction and catalytic deterioration in the low-pressure-reaction stage (cf. page 11, lines 11 to 19). It is, therefore, understood that if the perchloroethylene and HCl are removed, the reaction gases do not flow continuously from the high-pressure-reaction stage to the low-pressure-reaction stage. This is quite in contradiction with the subject-matter of Claim 1 of this request which combines a continuous flow of gases and a removal of perchloroethylene and HCl. For this reason, the requirement of Article 123(2) EPC is not met.

6.3 The fifth auxiliary request must, therefore, be refused.

Sixth auxiliary request (submitted on 29 April 2004)

7. *Articles 123(2) EPC - Amendments*

7.1 There is in the claimed subject-matter of Claim 1 of that request (cf. point IX above) the same contradiction with the disclosure of the application as originally filed as that noted regarding the fifth auxiliary request (cf. point 6.2 above), namely a continuous flow excludes in the original disclosure the removal of any gases. For this reason, the requirement of Article 123(2) EPC is not met.

7.2 The sixth auxiliary request submitted with the letter received on 29 April 2004 must, therefore, be refused.

Sixth auxiliary request submitted at the oral proceedings

8. *Articles 123(2)(3) EPC - Amendments*

8.1 The subject-matter of Claim 1 of this request results from the combination of the subject-matters of Claims 1 and 2 as granted and the further amendment that the temperature in the first reaction region is lower than in the second reaction region. That amendment is supported by the application as originally filed (cf. page 10, lines 11 to 13).

8.2 Furthermore, that amendment also restricts the scope of the protection conferred and thus satisfies the requirements of Article 123(3) EPC.

9. *Article 56 EPC - Inventive step*

9.1 The subject-matter of Claim 1 of this request is distinguished from Claim 1 as granted in that the pressure in the first reaction stage is narrowed, i.e. between 0.49 MPaG and 1.47 MPaG instead of 0.294 MPaG

and 2.94 MpaG, the pressure in the second reaction stage is not more than 0.294 MPaG instead of 0.49 MPaG and the temperature in the first reaction region is lower than in the second reaction region.

9.2 However, such amendments do not change the issues discussed in the assessment of the inventive step of Claim 1 of the main request (cf. point 4 above). Indeed, the Appellant did not put forward any unexpected technical advantage relating to the added features, so that the technical problem to be solved can only be seen in view of document (3), the closest state of the art, in the provision of an alternative process for preparing HFC-125. Furthermore, in document (2), i.e. the fluorination of perchlorethylene, the reaction is performed at a pressure of 0.69 MPaG and a temperature of 250°C (cf. point 4.5.3 above), whereas in document (3), i.e. the fluorination of HCFC-123, the reaction is performed at atmospheric pressure, i.e. 0.1 MPaG and at a temperature of 350°C (cf. Example No. 1), namely at a temperature higher than in the first reaction stage.

9.3 As found in the assessment of the inventive step of Claim 1 of the main request (cf. point 4.5.7 above), it would have been obvious for the skilled person, in the absence of any unexpected effect, to use as a method of preparation of HCFC-123 involved in the process of document (3), the teaching of document (2) and, therefore, achieve without inventive ingenuity a process within the scope of Claim 1 of the present request.

9.4 Since the Board can only decide on a request as a whole, the sixth auxiliary request must be refused.

Seventh auxiliary request

10. *Admissibility*

10.1 The present request was submitted at the oral proceedings before the Board. The Appellant did not provide any justification for such late filing.

10.2 The Respondent objected to the admissibility into the appeal proceedings of said request as submitted during the oral proceedings before the Board for being late filed.

10.3 In respect of this auxiliary request, the Board would like to observe that the purpose of the appeal procedure in an *inter partes* case is mainly to give the losing party the possibility of challenging the decision of the Opposition Division on its merits (cf. G 9/91, OJ EPO 408, point 18 of the reasons). The appealing Proprietor of the patent, unsuccessful before the Opposition Division, thus has the right to have the rejected requests reviewed by the Board of Appeal. If he wants, however, other requests to be considered, admission of these requests into the proceedings is a matter of discretion of the Board of Appeal, and is not a matter of right (cf. T 840/93, OJ EPO 1996, 335, point 3.1 of the reasons). For the exercise of the discretion in respect of the admission of requests by the appealing Proprietor of the patent that were not before the Opposition Division, it is established case law of the Boards of Appeal that the crucial criteria are whether or not the amended claims of those requests are clearly allowable and whether or not those amended

claims give rise to fresh issues which the other party, i.e. the Respondent-Opponent, and the deciding Board can reasonably be expected to deal with properly without unjustified procedural delay (cf. Case Law of the Boards of Appeal of the European Patent Office, 4th edition 2001, VII. D. 14.2.2, in particular T 401/95, point 5.2).

10.4 Present Claim 1 distinguishes from Claim 1 of the sixth auxiliary request in the use in the first and second reaction region of a chromium oxide catalyst having a surface area of not less than 170 m^2/g or a catalyst comprised of chromium oxide with a surface area not less than 170 m^2/g and at least one element chosen from Ru and Pt (cf. point V above), namely part of the features of Claim 5 as granted. Since the Board found that the subject-matter of Claim 1 of the sixth auxiliary request did not involve an inventive step (cf. point 9.3 above), the question boils down to examining whether that fresh feature can render the claimed subject-matter patentable under EPC.

10.5 However, the Respondent, in addition to the non-admissibility of this request as late-filed, contested that the description of the patent in suit was sufficiently clear and complete for a person skilled in the art to carry out the invention in the form of the claimed subject-matter on the ground that no method of preparation of the catalyst was disclosed.

10.6 The Board observes that the opposition was filed under Article 100(b) EPC and that the Respondent in the grounds of opposition specifically objected to the catalysts defined in present Claim 1 (cf. point 3.2 of

the grounds of opposition). However, that specific issue which is decisive in the present case was never examined by the Opposition Division since its decision relates to the patentability of Claim 1 as granted.

10.7 In the present situation, the issue whether or not the claimed subject-matter complies with the requirements of Article 83 EPC could only be considered at this stage if the subject-matter of Claim 1 complied clearly with the requirement of Article 83 EPC.

10.8 However, it is observed, first, that the examples do not disclose the catalysts as defined in Claim 1. Furthermore, no method of preparation is described. The Appellant argued that the description of the patent in suit referred to two European patent applications, i.e. EP 514932 and EP 516 000 disclosing such fluorination catalysts. The Respondent contested that the methods of preparation therein enabled the skilled person to prepare the catalysts, invoking in that respect the decision of the Opposition Division regarding the European patent 514 932 which, in an *obiter dictum* following the finding that the said patent did not meet the requirements of Article 123(2) EPC, had noted that the requirements of Article 83 EPC were not fulfilled. The said European patent applications were, furthermore, not submitted in the opposition or appeal proceedings. Although the said *obiter dictum* cannot be considered as *res judicata* it becomes nevertheless clear that deciding on the sufficiency of disclosure of the subject-matter of Claim 1 would necessitate examining in detail facts never submitted before. Thus, considering Claim 1 of this auxiliary request amounts to considering a fresh case which, if admitted, would

require the remittal of the case to the first instance for further prosecution in view of the necessity to start the whole opposition procedure anew on the basis of the claims of this request. This would not only cause considerable procedural delay but also prevent the Board from taking a final decision at the end of the oral proceedings.

10.9 However, if oral proceedings take place, the Board shall endeavour to ensure that the case is ready for decision at the conclusion of the oral proceedings, unless there are special reasons to the contrary (cf. Article 11(3) of the Rules of Procedure of the Boards of Appeal, (OJ EPO 1983, 7)) which is clearly not the case here as follows from the above considerations.

10.10 For the above reasons, the Board in the exercise of its discretion decides not to admit the Appellant's seventh auxiliary request into the proceedings.

Eighth auxiliary request

11. *Article 123(2)(3) EPC - Amendments*

11.1 The subject-matter of independent Claim 1 of this request results from the combination of the subject-matters of Claims 1, 3 and 4. The subject-matter of independent Claim 5 of this request results from the combination of the subject-matters of Claims 1, 7 and 8 as granted. The subject-matter of dependent Claims 2, 3, 4, 6 and 7 corresponds to the subject-matter of Claims 2, 5, 6, 9 and 10 as granted. There is, therefore no objection under Article 123(2) EPC.

11.2 Furthermore, those amendments restrict the scope of the protection conferred and thus satisfies the requirements of Article 123(3) EPC.

12. *Article 56 EPC - Inventive step*

12.1 The subject-matter of Claims 1 and 5 represent two closely related variants of the claimed invention. The first variant (Claim 1) relates to an embodiment where a common distillation column is installed between the first and second reaction regions, whereas the second variant (Claim 5) relates to an embodiment where independent distillation columns are installed before and behind the second region with low pressure. Both variants result in the recycling of unreacted perchloroethylene and HF to the first reaction region before the gas flow enters the second reaction region.

12.2 The Respondent only contested the inventive step of the subject-matter of Claims 1 and 5 on the ground that the added subject-matter regarding the recycling of the gases were obvious operations within the skill of the person skilled in the art. No evidence was submitted in that respect.

12.3 The Appellant did not submit any evidence showing an improvement in view of document (3) which must be regarded as the closest prior art. That document discloses, in particular, the recycling of the HCFC-124 to the reactor along with other under-fluorinated compounds (cf. point 4.2.1 above).

The technical problem to be solved can, thus, only be seen in the provision of an alternative process for manufacturing HFC-125.

12.4 In view of the description of the patent in suit, the Board is convinced that the technical problem is solved within the scope of Claims 1 and 5.

12.5 The Board concurs with the Appellant that the description, on page 6-5 in document (2), of a process for recycling the unreacted products flowing out of the reactor, never relied upon by the Respondent, is too scant to establish clearly the material disclosure in the absence of any diagram. That description is, therefore, disregarded.

12.6 In the absence of any document teaching or even hinting at the separation and recycling of gases as defined in Claims 1 and 5, it is concluded that those claims meet the requirement of Article 56 EPC. The same applies to dependent Claims 2, 3, 4, 6 and 7 which represent particular embodiments of the subject-matter of Claims 1 and 5.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to maintain the patent on the basis of the eighth auxiliary request submitted at the oral proceedings on 29 June 2004 and a description to be adapted thereto.

The Registrar: The Chairman:

N. Maslin A. Nuss