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**Datasheet for the decision
of 7 November 2017**

Case Number: T 0805/14 - 3.3.10

Application Number: 10006819.6

Publication Number: 2228421

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A61Q19/00, A61Q5/06, A61Q15/00,
A61K9/12

Language of the proceedings: EN

Title of invention:
Compositions containing fluorine substituted olefins

Patent Proprietor:
Honeywell International Inc.

Opponent:
Mexichem Amanco Holding S.A. de C.V.

Headword:
Compositions containing fluorine substituted olefins/Honeywell

Relevant legal provisions:
EPC Art. 54, 56, 76(1), 83, 100(a), 100(b), 100(c), 123(2),
123(3)

Keyword:

Divisional application - added subject-matter (no)

Amendments - allowable (yes)

Sufficiency of disclosure - (yes)

Novelty - (yes)

Inventive step - (yes)

Decisions cited:

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0805/14 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 7 November 2017

Appellant: Mexichem Amanco Holding S.A. de C.V.
(Opponent) Rio San Javier No. 10
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Respondent: Honeywell International Inc.
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Representative: Crooks, Elizabeth Caroline
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
26 March 2014 concerning maintenance of the
European Patent No. 2228421 in amended form.**

Composition of the Board:

Chairman P. Gryczka
Members: J.-C. Schmid
T. Bokor

Summary of Facts and Submissions

- I. The Appellant (opponent) lodged an appeal against the interlocutory decision of the Opposition Division which found that the European patent No. 2 228 421 amended according to the then pending first auxiliary request met the requirements of the EPC.
- II. Notice of opposition had been filed by the Appellant requesting revocation of the patent-in-suit in its entirety on the grounds of lack of novelty and inventive step (Article 100(a) EPC), insufficient disclosure of the invention (Article 100(b) EPC) and extension of the subject-matter of the patent-in-suit beyond the content of the parent application as filed (Article 100(c) EPC).
- III. *Inter alia*, the following documents were cited in the opposition proceedings
- (4) US-A-3 723 318 and
 - (5) JP-A-0 4 110 388 supplemented by
 - (5a) which is its English translation.

According to the Opposition Division, the subject-matter of claim 1 of the then pending first auxiliary request did not extend beyond the content of the parent application as filed and application as filed (Articles 100(c), 123(2) and 76(1) EPC). The Opposition Division did not see any reason why HFO-1234 could not be used as a propellant and the opponent (Appellant) did not bring any evidence to the contrary. The patent-in-suit met therefore the requirement of sufficiency of disclosure. The subject-matter of claim 7 of the then pending first auxiliary request was novel over document

(5), since the skilled person would have to make two selections to arrive at the claimed subject-matter. Document (4) represented the closest prior art to the invention. This document disclosed the use of trifluoropropenes as a propellant. The technical problem to be solved was the provision of an alternative propellant. Document (5) was not concerned with propellants so that the skilled person had no motivation to combine the teaching of document (4) with that of document (5) in order to solve the problem of providing an alternative propellant. The opposition division concluded that the subject-matter of claims 1 to 13 of the then pending first auxiliary request met the requirement of novelty and inventive step.

- IV. In the letter setting out the grounds of Appeal dated 31 July 2014, the Appellant submitted that claims 1 to 13 of the then pending first auxiliary request maintained by the Opposition Division introduced subject-matter which extended beyond the content of the parent application as filed. The subject-matter of the then pending claims 7 and 11 to 13 lacked novelty over document (5). The closest prior art to the invention was document (4). The subject-matter of the then pending claims 1 to 13 lacked an inventive step over document (4) combined with document (5) or in the light of document (5) alone.
- V. With the letter of response to the Appellant's grounds of appeal, the Respondent (patent proprietor) filed a new main request and twelve auxiliary requests.
- VI. With the communication dated 6 June 2017 the parties were summoned to oral proceedings to be held on 7 November 2017.

- VII. With a letter dated 7 September 2017, the Respondent filed a 13th auxiliary request.
- VIII. With a letter dated 1 November 2017, the Appellant announced that it would not be attending the oral proceedings and withdrew its request for oral proceedings.
- IX. During the oral proceedings held on 7 November 2017 before the Board, the Respondent defended the maintenance of the patent-in-suit on the basis of a new main request filed during the oral proceedings and on the basis of the thirteen auxiliary requests filed earlier in the appeal proceedings.

The new main request differs from the former main request filed on 22 December 2014 only in that dependent claims 4, 11 and 12 have been deleted. Independent claims 1 and 5 of the main request read as follows:

"1. Use of a composition comprising 1,3,3,3-tetrafluoropropene (HFO-1234ze) as a propellant."

"5. A sprayable composition comprising a propellant comprising 1,3,3,3-terafluoropropene (HFO-1234ze), and a material to be sprayed."

- X. The Appellant requests in writing that the decision under appeal be set aside and the patent be revoked.
- XI. The Respondent requests that the decision under appeal be set aside and the patent be maintained in an amended form on the basis of the main request filed during the oral proceedings before the Board, or on the basis of

any of the first to thirteenth auxiliary requests filed in the appeal proceedings.

XII. At the end of the oral proceedings held on 7 November 2017, the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Amendments

2. According to the Appellant, claims 1 to 13 of the then pending auxiliary request 1 maintained by the opposition division do not meet the requirement of Article 76(1) EPC because they contain added matter.

2.1 Claim 1 of the new main request corresponds to the combination of claim 1 with dependent claim 4 of the then pending auxiliary request 1, i.e. the "at least one tetrafluoropropene (HFO-1234)" has been limited to 1,3,3,3,3-tetrafluoropropene (HFO-1234ze). Furthermore dependent claims 4, 5 and 12 and 13 of the then pending auxiliary request 1 have been deleted.

2.2 The use of a composition comprising 1,3,3,3-tetrafluoropropene as a propellant is disclosed at page 10, lines 14 to 16 in combination with page 5, line 16 to 17 and page 6, lines 26 and 27 of the parent application as filed.

2.3 According to the Appellant, various selections should be made within the disclosure of the parent application in order to arrive at the subject-matter of claim 1.

However, the parent application as filed discloses the use of the compositions of the invention as a propellant (see page 10, lines 16 and 17), which are compositions comprising at least one fluoroalkene containing from 3 to 4 carbon atoms and at least one carbon-carbon double bond, according to page 5, lines 16 to 18. The composition is preferably is 1,3,3,3-tetrafluoropropene (HFO-1234ze), as disclosed on page 6, line 26 and 27. Therefore, the parent application as filed discloses directly the use of a composition comprising 1,3,3,3-tetrafluoropropene as a propellant. Consequently, no selection has to be made in the disclosure of the parent application as filed to arrive at the subject-matter of claim 1 of the main request, which latter therefore meets the requirement of Article 76(1) EPC.

- 2.4 Dependent claim 2 is based on page 10, line 14; dependent claim 3 is based on page 10, lines 18 and 19; dependent claim 4 is based on page 10, lines 17 and 18 of the parent application as filed.

According to the Appellant further selections should be carried out within the disclosure of the parent application as filed in order to arrive at the subject-matter of these dependant claims. However, the subject-matter of dependent claims 2 to 4 relates to embodiments which are specifically disclosed in the cited passages of the parent application as filed. Accordingly, no further selection has to be made to arrive at the subject-matter of dependent claims 2 to 4 of the main request.

- 2.5 A sprayable composition comprising a propellant comprising 1,3,3,3-terafluoropropene (HFO-1234ze), and a material to be sprayed is disclosed at page 6, lines

14 to 16 in combination with page 5, line 16 to 17 and page 6, lines 26 and 27 of the parent application as filed.

According to the Appellant, various selections should be made within the disclosure of the parent application in order to arrive at the subject-matter of claim 5. However, the parent application as filed discloses that the propellant compositions of the invention are preferably sprayable compositions and comprise a material to be sprayed (see page 10, lines 14 to 16). According to page 5, lines 16 to 18 the propellant compositions comprise at least one fluoroalkene containing from 3 to 4 carbon atoms and at least one carbon-carbon double bond, preferably 1,3,3,3-tetrafluoropropene (HFO-1234ze), as disclosed on page 6, line 26 and 27. Therefore, the parent application as filed discloses directly the subject-matter of claim 5 of the main request. The Appellant's argument is therefore rejected.

The subject-matter of dependents claim 6 to 9 relates embodiments specifically disclosed at page 10, lines 17 to 22 of the parent application as filed.

Consequently, claims 5 to 9 of the main request meet the requirement of Article 76(1) EPC.

3. Pages 1 to 20 of the application as filed are identical to pages 1 to 20 of the parent application as filed. Accordingly, claims 1 to 9 of the main request meet the requirement of Article 123(2) EPC too.
4. With respect to the claims of the patent as granted, the "at least one tetrafluoropropene (HFO-1234)" has been limited to 1,3,3,3-tetrafluoropropene

(HFO-1234ze), which restricts the protection conferred as compared with independent claim 1 and 6 of the patent as granted.

Accordingly, the requirement of Article 123(3) EPC is also met.

Sufficiency of the disclosure

5. The Appellant submitted that the patent did not contain sufficient information for a skilled person to arrive at the claimed composition, the production of which would depend on different factors, such as operating conditions, physical properties of the components and interaction between the components.

However, the invention is concerned with the use of 1,3,3,3-tetrafluoropropene (HFO-1234ze) as a propellant. Once the skilled person knows from the patent-in-suit that HFO-1234ze is a suitable propellant, it is within his common general knowledge to select an appropriate material to be sprayed in order to make a sprayable composition. The Appellant did not indicate any specific factors which would prevent the skilled person from preparing a sprayable composition.

Therefore, the Appellant failed to provide evidence in support of its objection. In the absence of such evidence it is concluded that the requirements of Article 83 EPC are complied with (Article 100(b) EPC).

Novelty

6. The Appellant challenged the novelty of the subject-matter of claim 5 of the main request (claim 7 of the

first auxiliary request pending before the opposition division) with regard to document (5). This document disclosed the use of tetrafluoropropenes as a heat transfer medium in a heat pump. According to the Appellant, in view of the teaching at page 6, line 3 to 12 and figure 2 (references are to document (5a)), it was evident that the test described in example 2 of document (5) has been conducted in the presence of compatible lubricating oil. The mixture of the tetrafluorenepropene and the compatible lubricant would form a composition that was capable of being sprayed.

- 6.1 At page 6, lines 3 to 12 of document (5a), it is disclosed that for the compounds represented by the formula $C_3H_mF_n$, there is no problem in connection with those general characteristics which are required of a heat transfer medium for heat pump purposes, for example compatibility with lubricating oils.

A circuit diagram of the refrigeration cycle used in the examples is shown in figure 2 of document (5a). On the diagram, there is an oil separator located between the compressor and the condenser.

Example 2 of document (5) discloses the coefficient of performance and refrigeration of 1,3,3,3-tetrafluoropropene (HFO-1234ze) measured from a heat pump operation using HFO-1234ze as heat transfer medium in a heat pump. However, there is no disclosure in example 2 that lubricating oil is added to HFO-1234ze for carrying out the heat pump operation. The statement at page 6 that lubricating oils are compatible with fluoropropenes is not a disclosure of a mixture of HFO-1234ze with lubricating oil. Furthermore, the presence of an oil separator in the schematic diagram of a heat pump does not mean that the heat pump

operation of example 2 must inevitably be carried out in the presence of lubricating oil.

The Board therefore concludes that there is no clear and directly derivable disclosure in document (5) for a skilled person of a sprayable composition comprising HFCO 1234ze and a material to be sprayed.

Accordingly, the subject-matter of claim 5 is novel with respect to document (5).

Inventive step

7. *Closest prior art*

The Board considers, in agreement with the Appellant that document (4), represents the closest prior art to the invention, and, hence takes it as the starting point in the assessment of inventive step. This document discloses the use of trifluoropropenes, e.g. 3,3,3-trifluoropropene, as a propellant.

8. *Technical problem underlying the invention*

According to the Respondent, the technical problem to be solved was the provision of an environmentally acceptable propellant having the requisite mosaic of properties required for use as a propellant, in particular having low or no toxicity.

9. *Solution*

The proposed solution is the use of HFO-1234ze as a propellant, as claimed in claim 1.

10. *Success*

In view of the technical data filed by the Respondant with the letter dated 20 December 2013 (see in particular the technical Bulletin "Honeywell Solstice™ Propellant" (document (10)) and the Material Safety Data Sheet for Solstice™ 1234ze (document (15))), the Board is satisfied that the technical problem has been solved by HFO-1234ze, in particular with respect to the toxicity requirements (see section 11 of document (15)).

11. *Obviousness*

11.1 According to the Appellant, the proposed solution was obvious in the light of document (5). However, document (5) exclusively relates to fluids for heat transfer purposes and therefore cannot render obvious the use of HFO-1234ze, as a propellant.

11.2 According to the Appellant, since document (4) reports a boiling point of -22°C for 3,3,3-trifluoropropene (HFO-1243zf) and since document (5) reports boiling point of -17°C for HFO-1243zf and -16°C for HFO 1234ze, the skilled person would have been motivated to use HFO 1234ze which is disclosed in document (5) in propelling applications as an alternative to HFO-1243zf disclosed in document (4). However, this argument does not convince the Board, since the skilled person looking for an alternative propellant would not have turned to document (5), which relates to heat transfer mediums.

11.3 According to the Appellant, since document (4) teaches the use of HFO-1243zf in both refrigeration and propelling applications, the skilled person would expect that HFO-1234ze, which is disclosed in document (5) as a refrigerant, would also have utility as a

propellant. However, refrigerants, in particular HFO-1234ze, are used under highly specific circumstances, presently in a closed circuit of a heat pump. From this it does not follow that all refrigerants in general, in particular HFO-1234ze, will be suitable as propellants under any circumstances, in particular having regard to the requirements of toxicity.

11.4 Hence, the Board comes to the conclusion that, in the light of the evidence on file, the subject-matter of claim 1 of the main request fulfils the requirement of inventive step (Article 56 EPC).

11.5 For the same reasons, an inventive step can also be acknowledged for the subject-matter of claim 5 (which is directed to a sprayable composition comprising HFO-1234ze as a propellant) and for dependent claims 2 to 4 and 6 to 9.

12. *Auxiliary requests 1 to 13*

Since the main request is considered to be allowable, it is not necessary to decide on the lower-ranking auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent in amended form on the basis of claims 1 to 9 of the Main request filed in the oral proceedings before the Board and a description yet to be adapted.

The Registrar:

The Chairman:



C. Rodríguez Rodríguez

P. Gryczka

Decision electronically authenticated