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**Datasheet for the decision
of 3 January 2023**

Case Number: T 0596/21 - 3.3.09

Application Number: 05738906.6

Publication Number: 1735400

IPC: C09K5/04, C08J9/00, C09K3/30

Language of the proceedings: EN

Title of invention:
AZEOTROPE-LIKE COMPOSITIONS OF TETRAFLUOROPROPENE AND
PENTAFLUOROPROPENE

Patent Proprietor:
Honeywell International Inc.

Opponent:
ARKEMA France

Headword:
Azeotrope-like compositions/HONEYWELL

Relevant legal provisions:
EPC Art. 83

Keyword:
Sufficiency of disclosure - main request (yes)

Decisions cited:

T 2290/12, T 0417/13, T 0182/18

Catchword:



Beschwerdekammern

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Case Number: T 0596/21 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 3 January 2023

Appellant: Honeywell International Inc.
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Respondent: ARKEMA France
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 7 April 2021
revoking European patent No. 1735400 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman A. Haderlein
Members: M. Ansorge
F. Blumer

Summary of Facts and Submissions

- I. The proprietor (appellant) lodged an appeal against the opposition division's decision revoking the patent.
- II. With its notice of opposition, the opponent (respondent) had requested that the patent be revoked on the grounds for opposition under Article 100(a) EPC in conjunction with Articles 54 and 56 EPC (lack of novelty and lack of inventive step) and Article 100(b) EPC.
- III. The opposition division decided, *inter alia*, that, with respect to what was then auxiliary request 2, the invention could not be carried out by the skilled person (Article 83 EPC).
- IV. In the communication pursuant to Article 15(1) RPBA, the board indicated that the subject-matter claimed in auxiliary request 2 met the requirement of Article 83 EPC whereas the higher-ranking requests were not allowable, and that it intended to remit the case to the opposition division for further prosecution.
- V. Both parties withdrew their request for oral proceedings. Moreover, with its letter dated 31 October 2022, the appellant filed a main request corresponding to former auxiliary request 2 and an auxiliary request 1.
- VI. The oral proceedings were cancelled.
- VII. Claim 1 of the main request (which corresponds to claim 1 of what was auxiliary request 2 before the opposition division) reads as follows:

"An azeotrope-like composition which consists essentially of effective amounts of HFO-1234yf and HFO-1225yeZ, wherein the azeotrope-like composition consists essentially of from 93 to less than 100 weight percent HFO-1234yf and from greater than zero to 7 weight percent of HFO-1225yeZ."

Claims 2 to 18 of the main request are directly or indirectly dependent on claim 1.

VIII. The parties' relevant arguments, submitted in writing, are reflected in the reasons for the decision set out below.

IX. Requests

The appellant requested that the decision be set aside and that the patent be maintained on the basis of the main request or, alternatively, the first auxiliary request, both requests filed by letter of 31 October 2022.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

MAIN REQUEST

1. Article 83 EPC

1.1 The respondent raised an objection concerning lack of sufficiency of disclosure, arguing in particular that the boiling point data provided in the patent for demonstrating azeotrope-like behaviour in the claimed

composition were insufficient and neither credible nor reliable. In its view it was difficult to precisely follow the experimental protocol given in the patent. In addition, it contended that the appellant had failed to credibly explain the issue of the error margin of the measurements. No favourable conclusion could be derived from the presented calculations using the Wilson's equation. The burden of proof with respect to demonstrating the existence of an azeotrope was on the appellant. Lastly, the respondent argued that T 182/18, as referred to by the appellant, was not applicable to the case in hand.

- 1.2 For the following reasons, the board does not agree.
 - 1.2.1 Claim 1 of the main request relates to an azeotrope-like composition which consists essentially of effective amounts of HFO-1234yf and HFO-1225yeZ, the azeotrope-like composition consisting essentially of from 93 to less than 100 weight percent HFO-1234yf and from greater than 0 to 7 weight percent of HFO-1225yeZ.
 - 1.2.2 While the skilled person is familiar with (real) azeotropes, the term "azeotrope-like" in claim 1 appears to be somewhat vague in scope since it also encompasses compositions that behave like azeotropic mixtures but are not necessarily real azeotropes (see paragraph [0011] of the patent).
 - 1.2.3 As stated in paragraph [0011] of the patent - and in line with the skilled person's common general understanding - an azeotropic mixture is a system of two or more components in which the liquid composition and vapour composition are equal at the stated pressure and temperature, i.e. the components of an azeotropic

mixture are constantly boiling and cannot be separated during a phase change.

- 1.2.4 In the case in hand, it has to be assessed whether the patent gives the skilled person sufficient guidance to carry out the invention, in view also of their common general knowledge (Article 83 EPC).
- 1.2.5 As correctly pointed out by the appellant, a successful objection of lack of sufficiency of disclosure presupposes that there are serious doubts, substantiated by verifiable facts, that the invention can be carried out.
- 1.2.6 Moreover, in order to establish insufficiency of disclosure in *inter partes* proceedings, the burden of proof is generally on the opponent to establish, on the balance of probabilities, that a person skilled in the art reading the patent, using their common general knowledge, would be unable to carry out the invention.
- 1.2.7 However, the respondent did not submit any verifiable facts, e.g. in the form of experimental evidence. The respondent did not try to analyse whether or not the claimed composition leads to an azeotrope. The respondent's line of reasoning is essentially based on criticising the potential imperfection in example 1 of the patent, asserting that there are missing explanations in the patent and raising clarity issues, such as the question of the error margin of the measurements or the suitability of Wilson's equation for supporting the appellant's case. In this context, and under the circumstances in hand, the board does not share the respondent's view that the burden of proof has shifted to the proprietor.

- 1.2.8 The potential imperfection in example 1 of the patent does not qualify as verifiable facts since it does not demonstrate that an azeotrope cannot be achieved. In this context, it is noted that even though there is no example according to the subject-matter claimed in the patent, this does not necessarily lead to a lack of sufficiency. In general, it is down to the opponent to demonstrate that the invention cannot be carried out.
- 1.2.9 Providing a composition which consists essentially of from 93 to less than 100 weight percent HFO-1234yf and from greater than 0 to 7 weight percent of HFO-1225yeZ is entirely routine for the skilled person.
- 1.2.10 In addition, the board sees no reason why a skilled person would be unable to assess whether or not a certain mixture of two components leads to an azeotrope. In the board's view, there is also no convincing reason why the skilled person would be unable to carry out appropriate measurements for drawing up a phase diagram and to determine whether or not an azeotrope is formed. The board cannot agree that in the present case a lack of sufficiency might derive from a measuring method for determining boiling points that is potentially insufficiently disclosed.
- 1.2.11 Although it may not be considered entirely clear what exactly "azeotrope-like" in claim 1 is meant to be, in the board's view this is at most a matter of clarity.
- 1.2.12 Under point II.4.4.3 of the decision, the opposition division argued that for the skilled person to be able to carry out the present invention, they would have to know whether or not a mixture comprising HFO-1234yf and HFO-1225yeZ fell under the scope of claim 1.

1.2.13 However, the issue of whether the skilled person would know whether or not subject-matter fell within the claimed scope is a requirement for clarity, not sufficiency of disclosure (see for instance T 2290/12, Reasons 3.1). If it is argued that insufficiency arises from a lack of clarity, establishing a lack of clarity in the claims is generally insufficient for establishing insufficiency of disclosure. Rather, it is necessary to show that the patent as a whole does not enable the skilled person, relying on the description and on their common general knowledge, to carry out the invention (see for instance T 417/13, Reasons 4.1).

1.2.14 The use of Wilson's equation to obtain a phase diagram using the values in Table 1 is considered to be within the skilled person's common general knowledge. However, for the reasons outlined above, this issue is not decisive in the case in hand.

In view of the above, the invention can be carried out, so the ground for opposition set forth in Article 100(b) EPC does not prejudice the maintenance of the patent.

2. Remittal to the opposition division

The respondent raised novelty and inventive step objections against the claimed subject-matter and requested that the board also deal with these objections without remitting the case to the opposition division, considering the age of the patent. In contrast, the appellant requested that the case be remitted to the opposition division for examination of novelty and inventive step.

Considering all the relevant factors, in particular the

appellant's corresponding request and the fact that the first-instance decision did not deal with questions of novelty and inventive step, the case is remitted to the opposition division for further prosecution (see also the Case Law of the Boards of Appeal, 10th edition, V.A.9.3.2).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division for further prosecution.

The Registrar:

The Chairman:



M. Schalow

A. Haderlein

Decision electronically authenticated