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**Datasheet for the decision
of 24 June 2008**

Case Number: T 0221/05 - 3.3.10

Application Number: 97948532.3

Publication Number: 0944564

IPC: C07C 17/20

Language of the proceedings: EN

Title of invention:

Halogen exchange reactions and uses thereof

Patentee:

ALBEMARLE CORPORATION

Opponent:

Clariant Verwaltungsgesellschaft mbH

Headword:

Halogen exchange reactions/ALBEMARLE

Relevant legal provisions:

EPC Art. 54(3), 56

Keyword:

"Novelty (yes) - no direct and unambiguous disclosure -
content of second prior art document not incorporated by
reference - claimed surface area of particles not necessarily
satisfied in prior art"

Decisions cited:

T 0099/85, T 0153/85

Catchword:

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Case Number: T 0221/05 - 3.3.10

D E C I S I O N
of the Technical Board of Appeal 3.3.10
of 24 June 2008

Appellant: Clariant Verwaltungsgesellschaft mbH
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Respondent: ALBEMARLE CORPORATION
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
14 December 2004 concerning maintenance of
European patent No. 0944564 in amended form.

Composition of the Board:

Chairman: R. Freimuth
Members: J. Mercey
D. S. Rogers

Summary of Facts and Submissions

I. The Appellant (Opponent) lodged an appeal on 9 February 2005 against the interlocutory decision of the Opposition Division posted on 14 December 2004 which found that European patent No. 944 564 in amended form met the requirements of the EPC.

II. The Appellant had filed a Notice of Opposition requesting revocation of the patent as granted in its entirety on the grounds of lack of novelty and inventive step (Article 100(a) EPC). *Inter alia* the following document was submitted in opposition proceedings:

(1) WO-A-98/05610.

III. The Opposition Division held that the subject-matter of claim 1 of the main request was not novel over the disclosure of document (1). It further held that the amendments made to the then pending first auxiliary request, consisting of a set of 71 claims, fulfilled the requirements of Article 123(2) EPC, that the subject-matter thereof was novel over document (1) and involved an inventive step over other cited prior art documents.

IV. At the oral proceedings before the Board, held on 24 June 2008, the Respondent (Proprietor of the patent) defended the maintenance of the patent in suit in amended form on the basis of a main request, submitted during these oral proceedings, consisting of a set of 63 claims, superseding the set of 71 claims upheld by the Opposition Division, or alternatively on the basis

of five auxiliary requests, all submitted with letter dated 23 May 2008. Independent claim 1 of the main request, which was identical to claim 1 of the first auxiliary request upheld by the Opposition Division, read as follows:

"A process which comprises heating a mixture formed from ingredients comprising (i) at least one finely-divided alkali metal fluoride having an average surface area of at least $0.20\text{m}^2/\text{g}$, (ii) at least one haloaromatic compound having at least one halogen atom of atomic number greater than 9 on an aromatic ring, and (iii) a tetra(dihydrocarbylamino)phosphonium halide catalyst, at one or more reaction temperatures at which at least one said halogen atom of said haloaromatic compound is replaced by a fluorine atom."

Dependent claims 2 to 63 corresponded to granted claims 2 to 63.

- V. The Appellant objected to the novelty of the claimed invention in view of document (1) which was prior art according to Article 54(3) EPC. Document (1), more particularly the Examples thereof, disclosed a process which comprised heating a mixture of potassium fluoride, a chloroaromatic compound and a tetra(dihydrocarbylamino)phosphonium halide, whereby at least one of said chlorine atoms was replaced by a fluorine atom. The Appellant conceded that there was no explicit disclosure in document (1) of the surface area of the potassium fluoride used therein. The subject-matter of claim 1 of the main request was nevertheless not novel over this disclosure, since the skilled

person would read said document in combination with the contents of documents (14) or (15):

(14) WO-A-87/04149,

(15) US-A-4 287 374

which the Appellant resubmitted with its Grounds of Appeal dated 22 April 2005, both of which were cited on page 1 of document (1), these documents disclosing finely divided potassium fluoride having a surface area covered by claim 1 of the main request. The Appellant further argued that it was the common general knowledge of the skilled person, as shown by document (17):

(17) Organofluorine Chemistry, Ed. R. E. Banks *et al.*, Plenum Press, New York, 1994, pages 20 to 23, 195 to 203, 218 to 219 and 600 to 603

filed by the Appellant with letter dated 7 February 2006, that for similar halogen-exchange reactions, potassium fluoride having a surface area within the claimed range was much more effective than that having a surface area below the claimed lower limit. The skilled person would thus only have used potassium fluoride having a surface area greater than 0.2 m²/g, especially in view of its commercial availability.

The Appellant raised no objections with respect to inventive step.

VI. The Respondent submitted that the subject-matter of claim 1 of the main request was novel over the disclosure of document (1), since said document did not disclose a finely divided alkali metal fluoride, let

alone a specific surface area thereof. Moreover, document (1) merely cited documents (14) and (15) in the description of the prior art, and neither explicitly described their content, nor explicitly incorporated their content by reference. The disclosure of document (17) could not be combined with the disclosure of document (1) for the purpose of novelty.

VII. The Appellant requested that the decision under appeal be set aside and that the patent be revoked.

The Respondent requested that the appeal be dismissed and that the patent be maintained on the basis of the main request, filed during the oral proceedings before the Board, or on the basis of auxiliary requests 1 to 5, all submitted on 23 May 2008.

VIII. 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. *Amendments (Article 123 EPC)*

2.1 The subject-matter of claim 1 is based on original claim 1, whereby the finely-divided alkali metal fluoride has been restricted to that having an average surface area of at least 0.20 m²/g, which is disclosed on page 7, lines 8 to 9 of the application as filed.

2.2 Therefore, the amendment made to claim 1 of the main request does not generate subject-matter extending beyond the content of the application as filed or beyond the scope of the granted claims. Thus the requirements of Article 123(2) and (3) EPC are satisfied.

3. *Novelty*

3.1 The sole issue arising from this appeal is the novelty of the subject-matter of the claims of the patent in suit; the Appellant has challenged only the novelty of the claimed invention, and this exclusively with regard to document (1), said document being comprised in the state of the art according to Article 54(3) EPC.

3.2 The Board observes that it is a generally applied principle that for concluding lack of novelty, there must be a direct and unambiguous disclosure in the state of the art which would inevitably lead the skilled person to subject-matter falling within the scope of what is claimed.

3.3 Document (1) discloses a halogen-exchange process for preparing fluoroaromatic compounds which comprises heating a mixture of potassium fluoride, a chloroaromatic compound and a tetra(dihydrocarbylamino)phosphonium halide (see Examples). Document (1) as a whole is silent with regard to the surface area of the potassium fluoride used.

3.4 The Appellant argued that the subject-matter of claim 1 was nevertheless not novel over the disclosure of document (1), since in the absence of a description in document (1) as to what kind of potassium fluoride to use, the skilled person would have filled this gap by reading said document in combination with the contents of documents (14) or (15), both of which were cited on page 1 of document (1), and which disclosed finely divided potassium fluoride having a surface area covered by claim 1 of the main request.

According to the jurisprudence of the Boards of Appeal, when assessing novelty, the disclosure of a particular prior art document must always be considered as it stands; in other words, it is only the actual content of the document, as understood by a skilled person, which destroys novelty. Where, however, there is a specific reference in a document to a second document, the presence of such specific reference may result in part or all of the disclosure of the second document being considered as part of the disclosure of the primary document when construing the content thereof (see decision T 153/85, OJ EPO, 1988, 1, reasons for the decision, point 4.2, paragraph 3).

In the present case, however, the documents (14) and (15) are referred to in document (1) in the section describing the prior art of said document. Thus, documents (14) and (15) do not form part of the disclosure of the invention of document (1).

3.5 The Appellant further argued that the skilled person would only have used potassium fluoride particles having a high surface area, namely of at least $0.20 \text{ m}^2/\text{g}$,

when performing the process of document (1), since at the relevant date spray-dried potassium fluoride was generally commercially available and it was the common general knowledge of the skilled person, as shown by document (17), that for similar halogen-exchange reactions, spray-dried potassium fluoride having a surface area of $1.5 \text{ m}^2/\text{g}$ was much more effective than calcined material having a surface area of only $0.1 \text{ m}^2/\text{g}$.

According to the jurisprudence of the Boards of Appeal, if a document discloses particles without disclosing their size, a specific size range is not implicitly disclosed if it is common knowledge among persons skilled in the art that particles whose size lies clearly outside this range may also be used for the same purpose (see decision T 99/85, OJ EPO, 1987, 413, reasons for the decision, point 2.2).

In the present case, potassium fluoride particles having a surface area outside the range claimed, namely below the lower limit of $0.20 \text{ m}^2/\text{g}$, were already known in the art for use in halogen-exchange reactions resulting in fluoroaromatic compounds. Thus, as indicated on page 1 of the Appellant's letter dated 7 February 2006, document (17) (see page 201, line 14) describes potassium fluoride having a surface area of $0.1 \text{ m}^2/\text{g}$ and even indicates that it may be used in such reactions. Thus such potassium fluoride was available to the public. Whether it was available commercially or not, is irrelevant to the assessment of novelty. Therefore, when applying the principles laid down in decision T 99/85, potassium fluoride particles having a surface area within the claimed range are not implicitly disclosed by document (1).

The Appellant has also argued that it was the common general knowledge of the skilled person that it was advantageous to use potassium fluoride having a high surface area in such a halogen-exchange reaction. The Board considers that this argument, namely that it was well known that one alternative was better than another, falls back upon considerations which should only be taken into account when assessing inventive step. Novelty and inventive step are, however, two independent requirements for the patentability of an invention, and different criteria apply for their assessment. Thus this objection of the Appellant is devoid of merit when assessing novelty.

- 3.6 Since the claimed surface area is not disclosed in document (1), neither explicitly nor implicitly, the Board concludes that the subject-matter of independent claim 1 is novel within the meaning of Articles 52(1), 54(3) EPC.

4. *Inventive step*

The decision under appeal held that the subject-matter claimed is inventive (see point III *supra*). Inventive step has not been contested by the Appellant during the appeal proceedings. Nor has the Board, on its own motion, any reason for departing from the considerations and findings of the first instance, thus endorsing the conclusion with respect to the presence of an inventive step in said decision.

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 on the basis of claims 1 to 63 according to the main request, submitted during the oral proceedings before the Board, and a description to be adapted:

The Registrar:

The Chairman:

P. Cremona

R. Freimuth