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D E C I S I O N
of 12 November 2002

Case Number: T 0907/99 - 3.3.7

Application Number: 95915428.7

Publication Number: 0701478

IPC: B01J 20/20

Language of the proceedings: EN

Title of invention:

Densified carbon black adsorbent and a process for adsorbing a gas with such an adsorbent

Applicant:

CABOT CORPORATION

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 123(2), 111(1)

Keyword:

"Amendments- added subject-matter (no)"

"Decision re appeals - remittal (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 0907/99 - 3.3.7

D E C I S I O N
of the Technical Board of Appeal 3.3.7
of 12 November 2002

Appellant: CABOT CORPORATION
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 3 May 1999 refusing
European patent application No. 95 915 428.7
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: R. E. Teschemacher
Members: G. Santavicca
B. L. ter Laan

Summary of Facts and Submissions

- I. European patent application 95 915 428.7 is based on international patent application PCT/US95/03806, filed on 28 March 1995, claiming a priority in the USA of 5 April 1994 (US 08/222,830) and published on 12 October 1995 under No. WO 95/26812.

The application as originally filed comprised 22 claims, independent claims 1 and 13 reading as follows:

"1. An adsorbent comprising a densified carbon black."

"13. A process for adsorbing a gas with an adsorbent comprising a densified carbon black."

Dependent claims 2 to 12 and 14 to 22 concerned preferred elaborations of the product according to claim 1 and of the process according to claim 13, respectively.

- II. By a decision of the Examining Division, posted on 3 May 1999, the above application was refused.

That decision was based on a set of 31 claims, as the sole request filed by letter of 23 March 1999, independent claims 1, 13, 27 and 30 reading as follows:

"1. An adsorbent comprising a densified carbon black, having a methane storage capacity increase per unit volume at 298°K and 35 atm of at least about 142% compared to an undensified carbon black."

"13. A process for adsorbing a gas with an adsorbent

comprising a densified carbon black, said process comprising the step of contacting said gas with said adsorbent for a sufficient time to adsorb at least a portion of said gas, and wherein said adsorbent has a methane storage capacity increase per unit volume at 298°K and 35 atm of at least about 142% compared to an undensified carbon black."

"27. An adsorbent consisting essentially of a densified carbon black."

"30. A process for adsorbing a gas with an adsorbent consisting essentially of a densified carbon black, said process comprising the step of contacting said gas with said adsorbent for a sufficient time to adsorb at least a portion of said gas."

Claims 2 to 12, 14 to 26, 28 to 29 and 31 concerned preferred elaborations of the subject-matter of claims 1, 13, 27 and 30, respectively.

III. In its decision, having regard *inter alia* to documents D1 (EP-A-0 218 403) and D2 (US-A-2 843 874), the Examining Division held that:

- (a) Since there was no basis in the original disclosure for a general carbon black exhibiting a methane storage capacity increase per unit volume of at least 142%, at 298°K and 35 atm, compared to an undensified carbon black, the subject-matter of independent claims 1 and 13 contravened the requirements of Article 123(2) EPC;
- (b) The subject-matter of claim 27 was known from D2 and, consequently, did not meet the requirements

of Article 54 EPC;

(c) The process of claim 30 was known from D1 and, consequently, did not meet the requirements of Article 54 EPC;

(d) Therefore, the application had to be refused.

IV. On 29 June 1999, the applicant lodged an appeal against that decision and payed the prescribed fee on the same day. With the statement of grounds of appeal, filed on 3 September 1999, the appellant enclosed four sets of claims as the main request and the first to third auxiliary requests, respectively.

V. In a communication in preparation for oral proceedings, the Board detailed the points to be dealt with, *inter alia* objections under Articles 123(2), 83, 84, 54 and 56 EPC.

VI. In reply, the appellant submitted a further set of claims as the fourth auxiliary request.

VII. Oral proceedings were held on 12 November 2002.

During the discussion, the appellant explained the gist of the invention underlying the application in suit and how the invention was to be seen in the light of the prior art documents, represented by D1, D2 as well as D3 (EP-A-0 360 236), D4 (US-A-4 081 370) and D5 (US-A-4 999 330).

The Board elucidated its objections, doubts and questions, in particular regarding the product claims, in view of the prior art represented for instance by

D2, D4 (comparative example) and also the "certain carbon blacks" mentioned in the description of the application in suit (page 1, lines 24 to 25, ie the article of Mullhaupt et al., "Carbon Adsorbents For Natural Gas Storage", International Carbon Conference of June 21-26, 1992).

As a result of that, the appellant withdrew the previous requests and submitted a set of seven use claims as the sole request, independent claim 1 reading as follows:

"1. Use of a densified carbon black having a bulk density of at least about 0.3 g/cm³ as an adsorbent for a gas."

Dependent claims 2 to 7 of the sole request concern preferred embodiments of the use according to claim 1.

VIII. The arguments of the appellant in support of the sole request can be summarised as follows:

- (a) The invention underlying the application in suit concerned the use of a densified carbon black, as opposed to activated carbon, as an adsorbent for a gas. Although densified carbon black as such was known, it was not used as an adsorbent for a gas, because it was thought that densification would be prejudicial to the pore structure.
- (b) The claims of the sole request were based on the claims as originally filed. Consequently, they did not contravene the requirements of Article 123(2) EPC.
- (c) These claims overcame all of the objections raised in

the impugned decision.

- IX. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 7 as submitted during the oral proceedings (sole request).

Reasons for the Decision

1. The appeal is admissible.
2. *Amendments*

The sole request as submitted during the oral proceedings before the Board comprises 7 use claims.

Claim 1 results from the combination of claims 1, 5, 8, 13 and 17 as originally filed. The change of category also has a general basis in the original description, for instance on page 1, lines 34 to 35, and in the examples.

Apart from the change of category, claims 2 to 7 correspond to claims 2 to 4, 6 to 7 and 9 as originally filed, with the following further modifications:

- In claim 2, the density has been amended to "bulk density", in line with original claims 5 and 17;
- In dependent claims 3 to 6, the original reference to claim 1 has been amended to "of any preceding claim". This amendment has a basis in the original examples and claims.

- In dependent claim 7, the original reference to claim 8 has been amended to "of any preceding claim". This particular amendment is logically related to the change of category and has a basis in the original claims and examples, where specific gases are adsorbed on adsorbents fulfilling the conditions as defined in the dependent claims.

Therefore, the requirements of Article 123(2) EPC are fulfilled.

3. *Further issues*

The submission during the oral proceedings of the sole request which is directed to use claims, shifts the focus of the subject-matter under discussion, thus constituting a new case.

Therefore, the Board, in order not to deprive the appellant of the possibility to be heard by two instances, does not consider it appropriate to deal with the matter any further.

Accordingly, the Board remits the case to the first instance for further prosecution pursuant to Article 111(1) EPC.

In this respect, the following points may be of relevance:

- a) Although claim 17 as originally filed had a subject-matter similar to present claim 1, no corresponding claim was present in the set of claims according to the request on which the

impugned decision was based. Therefore, the impugned decision does not address any claim concerning the use of a densified carbon black having a minimum density as a gas adsorbent now being claimed.

- b) Nevertheless, it is apparent from the file (communication of 14 July 1998, page 2, point 4) that original claim 17 had been objected to as lacking novelty having regard to D1, in particular in view of examples 30 to 32 and the term "PCB" in Table 1A. The Examining Division interpreted "CB" in "PCB" as "carbon black". However, in the light of documents US-A-4 522 159 and US-A-4 523 548 acknowledged in D1 (page 1, line 22), wherein the term "PCB" is part of a product designation for an activated carbon (column 11, the table), the meaning of the term "PCB" may have to be reconsidered.
- c) Furthermore, in respect of the densification of furnace carbon black, the Board is aware of document US-A-2 674 522 (eg column 2, lines 20 to 33; Examples I and II), which has not been considered before during these proceedings.
- d) At present, it is not apparent whether the relevance of the prior art acknowledged in the description of the original application in suit (page 1, lines 21 to 30), ie both the article of Mullhaupt and US-A-4 999 330, has ever been considered.

Order

For these reasons it is decided:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance for further prosecution.

The Registrar:

The Chairman:

C. Eickhoff

R. Teschemacher