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**Datasheet for the decision
of 6 July 2017**

Case Number: T 0695/15 - 3.3.05

Application Number: 04010143.8

Publication Number: 1475141

IPC: B01D53/94

Language of the proceedings: EN

Title of invention:

Catalyst for purifying diesel engine exhaust gas and method
for production thereof

Patent Proprietors:

ICT Co., Ltd.
International Catalyst Technology, Inc.

Opponent:

Helbig, Christian, Dr.

Headword:

Powdery form/ICT

Relevant legal provisions:

EPC Art. 123(2)
RPBA Art. 13(1), 13(3)

Keyword:

Amendments - main request and auxiliary request 1 - added
subject-matter (yes)
Late-filed auxiliary request 2 - amendments after arrangement
of oral proceedings - admitted (no)

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

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Case Number: T 0695/15 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 6 July 2017

Appellant: ICT Co., Ltd.
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 20 January 2015 revoking European patent No. 1475141 pursuant to Article 101(3) (b) EPC.**

Composition of the Board:

Chairman E. Bendl
Members: A. Haderlein
 P. Guntz

Summary of Facts and Submissions

- I. The present appeal lies from the decision of the opposition division to revoke European patent 1 475 141. The patent in suit concerns a catalyst for purifying diesel engine exhaust gas and a method for production thereof.
- II. The opposition division found that claim 1 of all requests underlying the impugned decision did not comply with the requirements of Article 123(2) and/or (3) EPC and Article 84 EPC respectively.
- III. The proprietors (appellants) filed an appeal against this decision.
- IV. With their grounds of appeal the appellants filed a main request and an auxiliary request (hereinafter "auxiliary request 1").
- V. The board issued a communication under Article 15(1) RPBA setting out its preliminary opinion with respect to the requests then on file.
- VI. Under cover of their letter dated 3 July 2017, the appellants filed an auxiliary request 2.
- VII. Claim 1 of the main request and of auxiliary requests 1 and 2 reads as follows:

Main request and auxiliary request 1 (corresponding to claim 1 as granted)

"1. A catalyst for purifying a diesel engine exhaust gas, having deposited on a refractory three-dimensional structure a catalyst component comprising (a) silica-

alumina having deposited thereon at least one noble metal selected from the group consisting of platinum, palladium, and rhodium, and (b) β -zeolite which is substantially free from depositions of said noble metal, wherein the mass ratio of silica/alumina in said silica-alumina is in the range of 0,02 - 1, wherein said silica-alumina is in a powdery form and wherein the average particle diameter of said silica-alumina powder is in the range of 5 - 90 μm ."

Auxiliary request 2 (amendments with respect to the patent as granted struck through or underlined)

"1. A catalyst for purifying a diesel engine exhaust gas, having deposited on a refractory three-dimensional structure a catalyst component comprising (a) silica-alumina having deposited thereon at least one noble metal selected from the group consisting of platinum, palladium, and rhodium, and (b) β -zeolite which is substantially free from depositions of said noble metal by chemically absorbing said noble metal on said silica-alumina, and drying thereof by heating, followed by mixing with said β -zeolite and subsequently subjecting the resultant mixture to dry or wet pulverization, wherein the mass ratio of silica/alumina in said silica-alumina is in the range of 0,02 - 1, wherein ~~said~~ a silica-alumina used is in a powdery form and wherein the average particle diameter of said silica-alumina powder is in the range of 5 - 90 μm ."

VIII. The arguments of the appellants, as far as relevant for the present decision, may be summarised as follows:

Main and first auxiliary requests - Article 123(2) EPC

Claim 1 (both requests) was directed to the final

product, and the feature "in a powdery form" related to the starting material. However, claim 1 could also be construed such that the feature "in a powdery form" referred to the final product, i.e. that a catalyst was claimed wherein the silica-alumina was actually present in powdery form. In the application documents as filed, this feature clearly referred to the starting material. This was clear in particular from claim 6 as filed, which referred to claim 1 as filed, the latter representing a product-by-process claim. The requirement of Article 123(2) EPC was met.

Auxiliary request 2 - admissibility

The amendments to claim 1 were *prima facie* allowable and *prima facie* overcame the objections raised with respect to claim 1 of the main and first auxiliary requests. It also did not raise any new issues. In particular, the amendment from "said silica-alumina is..." to "a silica-alumina used is..." made it clear that the feature "powdery form" referred to the starting material and not to the final product. If the board found that the replacement of "said" by "a" was objectionable, the appellants offered to make a corresponding amendment to auxiliary request 2. The term "absorbing" in claim 1 was meant to read "adsorbing".

The feature "substantially free from depositions of said noble metal" found its basis on page 10, lines 25 to 31. For the skilled person it was immediately clear that the slurry mentioned in this passage was not necessary for producing a catalyst wherein the zeolite was substantially free from noble metal depositions. For these reasons, auxiliary request 2 should be

admitted by the board.

- IX. The arguments of the respondent, as far as relevant for the present decision, may be summarised as follows:

Main and first auxiliary requests - Article 123(2) EPC

Claim 1 was to be construed such that the feature "in a powdery form" related to the final product, i.e. that a catalyst was claimed wherein the silica-alumina was actually present in powdery form. In the application documents as filed, however, this feature clearly related to the starting material. This was clear in particular from claim 6 as filed, which referred to claim 1 as filed, the latter representing a product-by-process claim. The requirement of Article 123(2) EPC was not met.

Auxiliary request 2 - admissibility

The amendments made in this request *prima facie* did not overcome the objections raised with respect to claim 1 of the main request and auxiliary request 1. Moreover, they gave rise to new objections. The process features now introduced into claim 1 did not mention the step of slurring although this step, at least on a *prima facie* level, was inextricably linked to the feature "substantially free from depositions of said noble metal" in view of the passage on page 10, lines 25 to 31. This request was therefore inadmissible pursuant to Article 13(1) and (3) RPBA.

- X. Requests

The appellants requested that the decision under appeal be set aside and that the patent be maintained on the

basis of the main request submitted with the grounds of appeal. In the alternative they requested that the patent be maintained on the basis of auxiliary request 1 filed with the grounds of appeal or of auxiliary request 2 filed with the letter dated 3 July 2017.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. Main request and auxiliary request 1 - amendments
 - 1.1 In order to assess whether the requirement of Article 123(2) EPC is complied with, claim 1 needs to be construed so as to determine the subject-matter claimed. The respondent is of the opinion that the contentious feature "said silica-alumina is in a powdery form" relates to the final product, i.e. the catalyst obtained after its preparation. While the appellants are of the opinion that claim 1 could be construed such that the contentious feature relates to the starting material used for producing the catalyst finally obtained, they also contend that this feature could equally be construed so as not to refer to the starting material but rather to the catalyst finally obtained, i.e. a catalyst comprising on its surface silica-alumina in a powdery form.
 - 1.2 The board observes that claim 1 of the main request and of auxiliary request 1 uses the wording "having deposited on a refractory three-dimensional structure..." and "said silica-alumina is in a powdery form" (emphasis added). Thus, according to the literal wording of claim 1, the latter refers to a catalyst having on its surface silica-alumina in a powdery form.

Also, in view of the wording of claim 1, for the skilled person it is not unreasonable to construe the contentious feature so as to refer to the final product and thus to a catalyst which comprises a deposit of silica-alumina in powdery form. Such a construction is also not technically meaningless, in particular because claim 1 could well refer to an intermediate product, i.e. to a catalyst prior to calcining. This finding is also supported by the appellants' contention that claim 1 may also be construed such that the contentious feature relates to the final product and not to the starting material used for forming the deposit (in the form of a slurry).

In conclusion, the subject-matter of claim 1 relates to a catalyst comprising silica-alumina in powdery form, i.e. wherein the silica-alumina is present in powdery form on the surface of the catalyst.

- 1.3 The parties agree that there is nowhere in the application documents as filed that such a catalyst is actually disclosed. Rather, the powdery form of the silica-alumina is mentioned only in conjunction with the starting material, i.e. the material used for forming the slurry which is dried and subsequently slurried again in order to apply it to the refractory three-dimensional structure (see page 6, lines 19 et seq.; page 9, line 32, to page 10, line 9). The application as filed therefore does not even disclose an intermediate product wherein the silica-alumina would be present in powdery form on the surface of the catalyst (i.e. prior to calcining). Moreover, while the contentious feature "wherein said silica-alumina is in a powdery form" is literally disclosed in originally filed claim 6, which is dependent on originally filed claim 1, the latter claim is drafted using the wording

"formed by depositing on a refractory three-dimensional structure...". In other words, claim 6 as originally filed also refers to the starting material and not to the final (or an intermediate) product.

1.4 As the subject-matter of claim 1 of the main request and of auxiliary request 1 relates to a product that is not disclosed in the application documents as originally filed, the requirement of Article 123(2) EPC is not complied with.

2. Auxiliary request 2 - admissibility

2.1 Auxiliary request 2 was filed only after filing of the grounds of appeal and after the summons to oral proceedings had been issued. More specifically, it was filed only three days prior to the oral proceedings before the board. Its admission is at the discretion of the board (Article 13(1), (3) RPBA).

2.2 The amendments made do not clearly overcome the objections raised with respect to the main request and auxiliary request 1. The wording "a silica-alumina used" in line 9 of claim 1 does not clearly refer to the starting material, but might equally be understood so as to refer to any step during the production process of the final catalyst or even to any additional silica-alumina used in this process. However, as discussed in the context of the main request and auxiliary request 1 the originally filed application documents only disclose silica-alumina in powdery form as a starting material.

2.3 The amendments made also give rise to new objections, at least on a *prima facie* level. In particular, in the passage on page 10, lines 25 et seq., of the

application as filed it is said that "[b]y adding the noble metal component into the silica-alumina slurry and stirring and mixing them together as described above, it is made possible to deposit the noble metal component on the silica-alumina by chemical adsorption". From this passage, the skilled person infers, at least on a *prima facie* basis, that it is necessary to carry out slurring as described in the paragraphs preceding the cited passage in order to achieve chemical adsorption on the silica-alumina without substantially adsorbing the noble metal on the zeolite. The process step of slurring (or a corresponding product-by-process feature) is however absent from claim 1 of this request.

Also, even if the indefinite article "a" were replaced by "said" as in granted claim 1, as suggested by the appellants, such an amendment would not be suitable for overcoming the objections raised with respect to the main request and auxiliary request 1 because the expression "said silica-alumina used" would then still not necessarily refer to the starting material. It might also be construed so as to refer to the silica-alumina obtained after depositing the noble metal and (dry) pulverising it, giving rise to a new objection for lack of clarity in view of the newly introduced expression "used".

- 2.4 Even when taking into account the second amendment proposed by the appellant, i.e. substituting "**absorbing**" by "**adsorbing**", the board's conclusions would not be different.
- 2.5 For these reasons, the board does not admit auxiliary request 2 into the proceedings.

3. As there is no allowable request, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



C. Vodz

E. Bendl

Decision electronically authenticated