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**Datasheet for the decision
of 1 March 2012**

Case Number: T 1578/08 - 3.3.07

Application Number: 02803282.9

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Language of the proceedings: EN

Title of invention:
FCC catalysts for feeds containing nickel and vanadium

Applicant:
BASF Catalysts LLC

Headword:
-

Relevant legal provisions:
EPC Art. 54, 111(1)

Keyword:
"Novelty - main request (no)"
"Remittal - first auxiliary request (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 1578/08 - 3.3.07

D E C I S I O N
of the Technical Board of Appeal 3.3.07
of 1 March 2012

Appellant: BASF Catalysts LLC
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 19 March 2008
refusing European patent application
No. 02803282.9 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: J. Riolo
Members: D. Semino
D. Keeling

Summary of Facts and Submissions

I. The appeal lies from the decision of the examining division dated 19 March 2008 refusing European patent application No. 02 803 282.9. Independent claim 1 of the application as filed read as follows:

"1. A zeolitic fluid catalytic cracking catalyst which passivates nickel and vanadium during catalytic cracking comprising:

- (a) at least about 15% by weight Y-faujasite crystallized in-situ from a metakaolin-containing calcined microsphere; and
- (b) alumina obtained by the calcination of a dispersible boehmite contained in said microsphere."

II. The decision was based on a set of claims filed as main request with letter of 10 August 2007.

Claim 1 according to the main request had been amended in that it had been specified that the dispersible boehmite was "peptized dispersible".

III. The examining division was of the opinion that the catalyst of claim 1 was not novel with respect to the disclosure of document D1 (US-A-5 993 645), since the specification that the boehmite to be calcined was peptized dispersible amounted to the identification of an inherent property of boehmite and the preparation of an in situ catalyst with boehmite inevitably required the preparation of at least some peptized dispersible boehmite. Moreover, there was no indication in the application that the use of a peptized dispersible

boehmite would result in any difference in the obtained product.

- IV. The applicant (appellant) filed a notice of appeal against the above decision. With the statement setting out the grounds of appeal, the appellant submitted three sets of claims as first to third auxiliary requests. Claim 1 according to the first auxiliary request read as follows:

"1. A zeolitic fluid catalytic cracking catalyst which passivates nickel and vanadium during catalytic cracking comprising:

- (a) at least about 15% by weight Y-faujasite crystallized in-situ from a metakaolin-containing calcined microsphere; and
- (b) alumina obtained by the calcination of a boehmite contained in said microsphere, wherein 90% or more of said boehmite is dispersed into particles less than 1 micron prior to said calcination."

- V. In a communication dated 22 November 2011 sent in preparation of oral proceedings, the Board addressed the issue of novelty of a product defined by its method of manufacture with reference to claim 1 according to the first auxiliary request. In this context it was noted that according to the case law, for such a product novelty could be established only if evidence was provided that modification of the manufacturing method with respect to the prior art resulted in other products, in other words evidence that the distinguishing process features necessarily implied product features, which made it possible to distinguish the product from the products of the prior art. It was

further noted that the product-by-process feature added to claim 1 of the first auxiliary request did not appear in the examples on file, so that it was not possible to determine whether it might have an impact on the produced catalyst.

- VI. With letter of 28 February 2012 the appellant filed a new document containing experimental data (D5).
- VII. Oral proceedings were held on 1 March 2012.
- VIII. The appellant argued that the proper interpretation of the expression "dispersible boehmite" was that it excluded poorly dispersible forms, such as pseudo-boehmite, and that the term "peptized" meant "evenly dispersed" and therefore specified that the boehmite had been evenly dispersed before calcination during preparation of the catalyst. A slurry of boehmite did not necessarily contain evenly dispersed boehmite and D1 did not mention that dispersible boehmite was used and did not specify how it was dispersed in the slurry. By means of that measure, the resulting microspheres contained more uniformly distributed alumina and were for that reason distinguishable from the microspheres disclosed in D1 and novel with respect to them. In addition, the examples and comparative examples in the application showed that better performance was obtained when using a more dispersible form of alumina, which was a hint of a difference in the product. The addition in claim 1 according to the first auxiliary request that "90% or more of said boehmite is dispersed into particles less than 1 micron prior to said calcination" expressed an even more explicit condition on the dispersion of boehmite in the slurry which was not

present in D1. The experimental data contained in D5 were meant to show that a difference in the product was achieved by means of the added process step. However, a remittal to the first instance would be appropriate, since those data, which had been filed as a reaction to the doubts of the Board expressed in the communication, were still incomplete.

- IX. The appellant requested that the decision under appeal be set aside, that novelty be recognised for the set of claims according to the main request filed with letter of 10 August 2007 and that the case be remitted to the department of first instance, or that the case be remitted on the basis of the first auxiliary request filed with the statement of grounds of appeal.

Reasons for the Decision

1. The appeal is admissible.
2. *Main Request - Novelty*
 - 2.1 The appellant did not dispute that D1 discloses zeolitic fluid catalytic cracking catalysts which passivate nickel and vanadium during catalytic cracking (column 1, lines 11-13; column 10, lines 19-25 and following results) comprising at least 15% by weight Y-faujasite crystallized in-situ from a metakaolin-containing calcined microsphere ("In-situ catalysts" section in column 2, line 53 to column 5, line 12, in particular the catalysts produced according to the method of claim 5) and alumina obtained by the

calcination of boehmite contained in said microsphere (column 4, lines 55-64, in particular line 63).

2.2 However, according to the appellant the mention of boehmite in a single passage of D1 (column 4, line 63) with no further information on its use in the preparation of the catalyst could not anticipate the use of "peptized dispersible" boehmite in the preparation of the catalyst according to claim 1 of the main request, which rendered that catalyst novel with respect to those of D1.

2.3 The Board cannot follow the arguments of the appellant for the following reasons.

2.3.1 The qualification "dispersible" with reference to the boehmite, with no quantitative measure of dispersibility, does not make it possible to distinguish dispersible forms of boehmite from less or more dispersible forms of boehmite and cannot be acknowledged as a distinguishing feature even for the method of preparation of the claimed catalyst. Furthermore it is recognised in the application (page 15, lines 15-18) that the intended form of boehmite is distinguished from other types of alumina, such as pseudo-boehmite and gibbsite (which are not boehmite), but not from other forms of boehmite, therefore implying that dispersibility is an intrinsic property of boehmite.

2.3.2 Also the further specification "peptized" with reference to the dispersible boehmite, which according to the appellant had to be understood as "evenly dispersed", is of a qualitative nature and does not

allow a distinction between "evenly" dispersed forms of boehmite and "less or more evenly" dispersed forms of boehmite.

2.3.3 In addition, the tests and comparative tests in the application are not relevant for the purpose of demonstrating that a novel product is produced when a specific form of boehmite is used in its preparation method, since they compare catalysts according to the invention with catalysts with no alumina matrix (Sample A, page 24, lines 1-3) or an alumina matrix originating from gibbsite (Sample B, page 24, lines 4-8) and do not therefore allow a comparison among catalysts prepared by using boehmite dispersed at different levels in the preparation slurry.

2.4 In summary, the Board sees no reason to diverge from the decision of the examining division as far as lack of novelty of the catalyst of claim 1 of the main request with respect to the disclosure of D1 is concerned. Therefore the appellant's request to acknowledge novelty for claims of the main request cannot be allowed.

3. *First auxiliary request*

3.1 Claim 1 according to the first auxiliary request differs from claim 1 according to the main request in that, instead of defining the boehmite as "peptized dispersible", it is specified that "90% or more of said boehmite is dispersed into particles less than 1 micron prior to said calcination".

- 3.2 The amendment results in the addition of a quantitative process feature related to the dispersion of boehmite in the preparation process of the catalyst which is not disclosed in D1, where no information is given on how boehmite is dispersed during manufacture of the catalyst.
- 3.3 The question therefore arises whether the distinguishing process feature necessarily implies product features which make it possible to distinguish the claimed product from the products of the prior art. Indeed according to the case law, for a product defined by its method of manufacture novelty can be established only if evidence is provided that modification of the manufacturing method with respect to the prior art results in a distinguishable product (Case Law of the Boards of Appeal, 6th edition 2010, II.B.6.2).
- 3.4 The appellant, made aware of the need to provide further evidence in that respect by the communication of the Board sent in preparation of the oral proceedings, filed a new document containing experimental data (D5) shortly before the oral proceedings.
- 3.5 Document D5 contains a single figure in which pore volume and "roller" are plotted with respect to a median dispersed particle size of alumina particles. The plotted quantities are not defined in D5, the experimental procedure is not explained and no comment is attached to the document.
- 3.6 The provision of D5 can be seen as a *bona fide* attempt on the side of the appellant to file the required

evidence in reaction to the communication of the Board, since tests have been made which are apparently meant to show the relevance of the distinguishing process feature (the particle size of the dispersed alumina) on the obtained product. However, the evidence in the present form does not enable the Board to rule on the merits of the request, since it is clearly incomplete due to the lack of explanation of the plotted quantities and of the experimental procedure.

- 3.7 Under such circumstances and considering that the addition of the quantitative process feature results in a fresh case compared to the one decided upon by the examining division, the Board considers it appropriate to allow the appellant's request to remit the case to the first instance in order to examine novelty of the catalyst of claim 1 according to the first auxiliary request with respect to document D1 in the light of experimental evidence yet to be completed.

Order

For these reasons it is decided that:

The decision under appeal is set aside and the case is remitted to the department of first instance for further prosecution on the basis of the first auxiliary request filed with the statement of grounds of appeal.

The Registrar

The Chairman

S. Fabiani

J. Riolo