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**Datasheet for the decision  
of 3 May 2011**

**Case Number:** T 1926/08 - 3.3.07

**Application Number:** 98117721.5

**Publication Number:** 0906784

**IPC:** B01J 29/06

**Language of the proceedings:** EN

**Title of invention:**

Process for preparing bound zeolites

**Patent proprietors:**

Polimeri Europa S.p.A.

**Opponents:**

Evonik Degussa GmbH  
BASF SE

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 54(3), 56, 83, 112(1)(a), 123

EPC R. 80, 138

RPBA Art. 13(3)

Article 1 of the Decision of the Administrative Council of  
28 June 2001 on the transitional provisions under Article 7 of  
the Act revising the EPC of 29 November 2000

Article 2 of the Decision of the Administrative Council of  
7 December 2006 amending the Implementing Regulations to the  
EPC 2000

**Relevant legal provisions (EPC 1973):**

EPC Art. 54(4)

EPC R. 23a, 87

**Keyword:**

"Late filed request - admitted (yes)"

"Rule 87 EPC 1973 - applicable (yes)"

"Different claims, description and drawings for different contracting states - admitted (yes)"

"Enlarged Board - referral (no)"

"Amendments - occasioned by ground of opposition (yes)"

"Amendments - added subject-matter (no)"

"Disclosure - sufficiency (yes)"

"Novelty (yes)"

"Inventive step (yes)"

**Decisions cited:**

J 0003/06, J 0010/07

**Catchword:**

Rule 87 EPC 1973 applies to European patents granted before entry into force of EPC 2000, because it is an implementing regulation to Article 54(4) EPC 1973 (see points 3.3 to 3.8).



Case Number: T 1926/08 - 3.3.07

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.07  
of 3 May 2011

**Appellants 01:** Evonik Degussa GmbH  
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**Representative:** -

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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
31 July 2008 concerning maintenance of the  
European patent No. 0906784 in amended form.

**Composition of the Board:**

**Chairman:** J. Riolo  
**Members:** D. Semino  
P. Schmitz

## Summary of Facts and Submissions

I. The appeals of the opponents 01 (appellants 01) and 02 (appellants 02) lie against the decision of the opposition division announced at the oral proceedings on 3 July 2008 concerning the maintenance of European patent No. 0 906 784 in amended form. The patent was based on European patent application No. 98 117 721.5, which was filed on 18 September 1998 and claimed the priority of the Italian application IT MI972250 filed on 3 October 1997. The designation fees were validly paid for the contracting states BE, CH, DE, DK, ES, FR, GB, LI, LU, NL. The mention of the grant of the patent was published in European Patent Bulletin 2005/46 of 16 November 2005. The granted patent was based on 19 claims, independent claim 1 reading as follows:

"1. A process for the preparation of zeolitic catalysts in the form of microspheres, comprising zeolite and oligomeric silica, which consists in subjecting to rapid drying the suspension, to which tetra-alkylorthosilicate is optionally added, resulting from the synthesis of the zeolite by hydrothermal treatment at autogenous pressure of the reagent mixture containing tetra-alkylammonium hydroxide as templating agent, and subjecting the product resulting from the drying to calcination.

II. Two notices of opposition were filed against the granted patent requesting revocation of the patent in its entirety on the grounds of lack of novelty (opponents 01 and 02), lack of inventive step (opponents 02) and insufficiency of disclosure (opponents 02) as set out in Article 100(a) and (b) EPC.

III. In the decision the following documents were cited  
*inter alia*:

- D1: EP-A-0 893 158
- D2: US-A-4 410 501
- D5: US-A-5 051 164
- D6: M.M.J. Treacy et al "Collection of Simulated XRD Powder Patterns for Zeolites", Elsevier, 2001, page 234
- D7: EP-A-0 265 018
- D16: US-A-3 329 628
- D17: DE-A-24 13 284
- D18: RU-C1-2 016 846 (English abstract and German translation)

D1 in particular is a European patent application published on 27 January 1999 and claiming the priority of German application DE 19731627 filed on 23 July 1997. The designation fees were validly paid for the contracting states BE, DE, ES, FR, GB, IT, NL, SE.

IV. The decision under appeal was based on a main request including a first set of claims for the contracting states BE, DE, ES, FR, GB, NL filed with letter of 30 June 2008 and a second set of claims for the contracting states CH, DK, LI, LU filed with letter of 23 June 2008, which request according to the decision met the requirements of the EPC.

The first set of claims included 5 independent product claims, which read as follows:

"1. A process for the preparation of zeolitic catalysts in the form of microspheres, comprising zeolite and

oligomeric silica, which consists in subjecting to rapid drying the suspension containing zeolite crystals and tetraalkylammonium hydroxide remaining in solution, to which suspension tetra-alkylorthosilicate is added, said suspension resulting from the synthesis of the zeolite by hydrothermal treatment at autogenous pressure of the reagent mixture containing tetra-alkylammonium hydroxide as templating agent, and subjecting the product resulting from the drying to calcination, the tetra-alkylorthosilicate being added in a quantity ranging from 0.08 to 0.50 moles per 100 grams of zeolite contained in the suspension resulting from the synthesis and the rapid drying being effected by feeding to a spray-drier."

"3. A process for the preparation of zeolitic catalysts in the form of microspheres, comprising zeolite and oligomeric silica, which consists in subjecting to rapid drying the suspension containing zeolite crystals and tetraalkylammonium hydroxide remaining in solution, said suspension resulting from the synthesis of the zeolite by hydrothermal treatment at autogenous pressure of the reagent mixture containing tetra-alkylammonium hydroxide as templating agent, and subjecting the product resulting from the drying to calcination, wherein the zeolite is selected from silicalite belonging to the MFI group or a zeolite consisting of silicon and aluminum oxides having an MFI, MFI/MEL, MEL, BEA, MOR, FAU and FAU/EMT structure, said rapid drying being effected by feeding the suspension to a spray-drier."

"4. A process for the preparation of zeolitic catalysts in the form of microspheres, consisting of MFI zeolite

having the formula  $p\text{HMO}_2 \cdot q\text{TiO}_2 \cdot \text{SiO}_2$  and oligomeric silica, wherein M is a metal selected from aluminum, gallium and iron, p has a value ranging from 0 to 0.04 and q has a value ranging from 0.0005 to 0.03, which consists in:

a) synthesis of the zeolite by means of hydrothermal treatment at autogenous pressure, at a temperature ranging from 190 to 230°C and for a time ranging from 0.5 to 10 hours, without alkaline metals, of a mixture containing a silicon source, a titanium source, optionally a source of a metal M, and tetrapropylammoniumhydroxide as templating agent, having the following composition expressed as molar ratios:

Si/Ti = 35-2000

M/Si = 0-0.04 wherein M is selected from Al, Ga and Fe

TPA-OH/Si = 0.2-0.5 wherein TPA = tetrapropylammonium

H<sub>2</sub>O/Si = 10-35

b) addition of tetra-alkylorthosilicate to the suspension resulting from the previous step a), containing zeolite crystals and tetraalkylammonium hydroxide remaining in solution;

c) rapid drying of the suspension obtained in step b), said rapid drying being effected by feeding the suspension to a spray-drier;

d) calcination of the product obtained in step c). "

"5. A process for the preparation of zeolitic catalysts in the form of microspheres, consisting of MFI zeolite having the formula  $a\text{Al}_2\text{O}_3 \cdot (1-a)\text{SiO}_2$  and oligomeric silica, wherein a has a value ranging from 0 to 0.02, which consists in:

a) synthesis of the zeolite by means of hydrothermal treatment at autogenous pressure, at a temperature

ranging from 190 to 230°C and for a time ranging from 0.5 to 10 hours, without alkaline metals, of a mixture containing a silicon source, optionally an aluminum source, tetrapropylammoniumhydroxide as templating agent, having the following composition expressed as molar ratios:

Al/Si = 0-0.04

TPA-OH/Si = 0.2-0.5 wherein TPA = tetrapropylammonium

H<sub>2</sub>O/Si = 10-35

b) addition of tetra-alkylorthosilicate to the suspension resulting from the previous step a) containing zeolite crystals and tetraalkylammonium hydroxide remaining in solution;

c) rapid drying of the suspension obtained in step b), said rapid drying being effected by feeding the suspension to a spray-drier;

d) calcination of the product obtained in step c)."

"6. A process for the preparation of zeolitic catalysts in the form of microspheres, consisting of MFI/MEL or MEL zeolite having the formula  $x\text{TiO}_2 \cdot (1-x)\text{SiO}_2$  and oligomeric silica, wherein x has a value ranging from 0.0005 to 0.03, which consists in:

a) synthesis of the zeolite by means of hydrothermal treatment at autogenous pressure, at a temperature ranging from 190 to 230°C and for a time ranging from 0.5 to 10 hours, without alkaline metals, of a mixture containing a silicon source, a titanium source, tetra-alkylammoniumhydroxide as templating agent, having the following composition expressed as molar ratios:

Si/Ti = 35-2000

TAA-OH/Si = 0.2-0.5

H<sub>2</sub>O/Si = 10-35



- b) addition of tetra-alkylorthosilicate to the suspension resulting from the previous step a) containing zeolite crystals and tetraalkylammonium hydroxide remaining in solution;
- c) rapid drying of the suspension obtained in step b), said rapid drying being effected by feeding the suspension to a spray-drier;
- d) calcination of the product obtained in step c)."

The second set of claims included a single independent product claim, which read as follows:

"1. A process for the preparation of zeolitic catalysts in the form of microspheres, comprising zeolite and oligomeric silica, which consists in subjecting to rapid drying the suspension containing zeolite crystals and tetraalkylammonium hydroxide remaining in solution, to which suspension tetra-alkylorthosilicate is optionally added, said suspension resulting from the synthesis of the zeolite by hydrothermal treatment at autogenous pressure of the reagent mixture containing tetra-alkylammonium hydroxide as templating agent, and subjecting the product resulting from the drying to calcination, the rapid drying being effected by feeding to a spray-drier."

V. As far as relevant to the present decision, the decision of the opposition division can be summarised as follows:

- (a) A separate set of claims for the contracting states not designated in D1 (prior art under Article 54(3) EPC) was allowable since Article 54(4) EPC 1973 and the corresponding Implementing

Regulations, namely Rules 23a and 87 EPC 1973, still applied, while Rule 138 EPC 2000 was not relevant.

- (b) The invention was sufficiently disclosed, since the objection that the skilled person would not be able to choose the correct spray-drying conditions for obtaining the required product was not credible and not supported by any facts or evidence. The requirements of Article 123(2) were met, since both set of claims were based on the original claims and a passage in paragraph [0003] of the A-publication. Article 123(3) EPC was also met, because all the claimed subject-matter fell within claim 1 as granted. The requirements of Rule 80 EPC were fulfilled, since all the limitations to the claims were occasioned by grounds of opposition under Article 100(a) or 100(b) EPC.
  
- (c) The claims according to the first set were novel with respect to the disclosure of document D1 (prior art according to Article 54(3) EPC for the contracting states BE, DE, ES, FR, GB, NL) in view of the quantity of tetra-alkylorthosilicate for claim 1, of the absence of titanium for claim 3, of the specific molar ratios Si/Ti and H<sub>2</sub>O/Si for claim 4, of the specific chemical formula for the MFI zeolite for claim 5 and of the specific molar ratios Si/Ti and H<sub>2</sub>O/Si for claim 6.
  
- (d) The processes claimed according to both sets were inventive with respect to any of D5 and D7, taken as the closest state of the art and combined with

each other, since they solved the problem of providing a simplified process for preparing catalysts comprising zeolite and oligomeric silica having a high mechanical resistance and, unlike the prior art, did not require a separation of the zeolite crystalline phase from the suspension obtained at the end of the synthesis before spray-drying. None of D5 and D7 disclosed that, for zeolites whose synthesis required the presence of tetra-alkylammonium hydroxide as templating agent, the resulting suspension at the end of the synthesis could be used as such, without further purification and/or filtration passages, for the preparation of zeolites bound with oligomeric silica in the form of microspheres.

VI. Both opponents appealed that decision.

With their statement setting out the grounds of appeal filed with letter of 24 November 2008 the opponents 01 submitted two questions of law to be referred to the Enlarged Board of Appeal. A revised version of the first question was filed with letter of 21 September 2009. Taking account of that revision the questions of law read as follows (the questions were formulated in German by the opponents 01; the translation into English is by the Board):

"1) Do amendments of a European patent, which have been requested after entry into force of EPC 2000, have to comply under application of Article 123(1) EPC 2000 with all the requirements of the Implementing Regulation to EPC 2000, in particular also of Rule 138 EPC 2000?"

"2) Which point in time is decisive for the question, whether Article 123(1) EPC 2000 is to be applied to a request for amendment of a European patent which has been granted before entry into force of EPC 2000?  
a) the time at which the decision on admissibility of the amendment is taken,  
b) the time at which the request, which is the object of the decision, was submitted, or  
c) the time at which the amendment was requested for the first time during the proceedings?"

VII. With the reply to the grounds of appeal of the opponents the patent proprietors maintained the main request underlying the contested decision as their main request and submitted eight auxiliary requests for the contracting states BE, DE, ES, FR, GB, NL and eight auxiliary requests for the contracting states CH, DK, LI, LU.

With letter of 20 April 2011 they submitted a new main request containing a first set of claims for the contracting states BE, DE, ES, FR, GB, NL and a second set of claims for the contracting states CH, DK, LI, LU and eight auxiliary requests, each containing a single set of claims for all contracting states. The new main request differed from the main request underlying the decision under appeal only in some minor changes in the dependent claims of both sets, which were meant to eliminate amendments in the dependent claims with respect to the granted claims, which had been objected to under Rule 80 EPC. The independent claims of the new main request were identical to the independent claims

of the main request underlying the decision under appeal for both sets of claims.

VIII. On 4 April 2011 the Board issued a communication in preparation of the oral proceedings which were held on 3 May 2011.

IX. The arguments of the appellants (opponents 01 and 02) on the main request can be summarised as follows:

*Admissibility of the main request*

(a) The main request, which was filed shortly before the oral proceedings took place, was late filed without any apparent reason, since the objections mentioned in the communication by the Board had already been raised by the appellants in their statements setting out the grounds of appeal. Therefore it should not be admitted into the proceedings.

*Admissibility of two sets of claims for different contracting states*

(b) The conditions under which a European patent can be amended were only laid down in Article 123 EPC. Since according to the transitional provisions of the Act revising the EPC, Article 123 of the EPC 2000 was applicable in the present case, only the Implementing Regulations to the EPC 2000 applied. The conditions of Rule 138 EPC which was the only legal basis for allowing a separate set of claims for some contracting states were, however, not met. Rule 87 EPC 1973 did not apply because it was not

a Rule relating to Article 54(4) EPC 1973 since it did not further specify and supplement this Article, but it implemented Article 123 EPC as follows also from its position in Part VII, Chapter V of the Implementing Regulations. Any different interpretation would not be in line with the jurisprudence of the Legal Board of Appeal in J 3/06 (OJ EPO 2009, 170). A separate set of claims for the contracting states CH, DK, LI and LU, which were not designated in Document D1 (prior art under Article 54(3) EPC), was in view of this not admissible.

*Request of referral to the Enlarged Board of Appeal*

- (c) Since the questions related to the applicability of the Implementing Regulations of the EPC 2000 to amendments of a patent which was granted before its entry into force concerned points of law of fundamental importance and the present decision depended on the answers thereto, the questions formulated in the letter of 24 November 2008 and revised in the letter of 21 September 2009 had to be referred to the Enlarged Board of Appeal.

*Amendments - Rule 80 and Article 123(2) EPC*

- (d) The definition of the suspension resulting from the synthesis of zeolite as "containing zeolite crystals and tetra-alkylammonium hydroxide remaining in solution" in all independent claims was not occasioned by a ground of opposition and therefore did not meet the requirements of Rule 80 EPC. It was indeed implicit in granted claim 1

that the suspension contained zeolite and it derived from the common general knowledge that tetra-alkylammonium hydroxide had to be added in excess, so that a part of it remained in solution. This was all the more true for claims 4, 5 and 6 of the first set, which contained a high ratio of tetra-propylammonium hydroxide to silicium, in view of the information in D2 and D6, which disclosed the amount of tetra-propylammonium hydroxide which is typically linked to a zeolite. The repetition of the terms "suspension" and "said suspension" in claims 1 and 3 of the first set and in claim 1 of the second set was also against the requirements of Rule 80 EPC.

- (e) Claim 1 of the first set did not have a basis in the original application. Original claims 3 and 5, which related to the quantity of tetra-alkylorthosilicate added to the suspension and to the spray-drying respectively depended individually only on original claim 1 and did not provide therefore a basis for their features in combination. Moreover, in the description the quantity of tetra-alkylorthosilicate was disclosed only in combination with a specific tetra-alkylorthosilicate, which was not mentioned in the claim. A similar objection applied to claim 3 of the first set, since it could not be derived from original claims 5 and 7, which depended individually only on original claim 1, and the spray-drying was disclosed in the original description only in combination with a specific temperature range.

The fact that independent claim 1 of the first set was limited to a specific quantity of tetra-alkylorthosilicate to be added to the suspension and that the same limitation did not appear in the other independent claims of the same set (claims 3, 4, 5 and 6) resulted also in an unallowable amendment. Similarly, the deletion of the passage in the description, paragraph [0006] of the granted patent "When, according to the present invention, tetra-alkylorthosilicate is added to the suspension resulting from the synthesis of zeolite, before this is subjected to rapid drying, it will be added in a quantity ranging from 0.08 to 0.50 moles per 100 grams of zeolite contained in the suspension" without a corresponding limitation in all independent claims resulted in an unallowable amendment.

*Sufficiency of disclosure*

- (f) In the patent it was prescribed that the particles obtained through the spray-drying were in the form of microspheres having a diameter ranging from 5 to 300  $\mu\text{m}$ . However, no technical teaching was present on how to put into practice the spray-drying step in order to obtain such microspheres, thereby resulting in lack of disclosure. Moreover, the patent in suit contained no technical teaching concerning how the suspension should be produced so that it contained some templating agent in solution after the hydrothermal synthesis of the zeolite.



*Novelty*

- (g) Claim 1 of the first set was not novel with respect to D1, which disclosed explicitly all its features except the quantity of tetra-alkylorthosilicate to be added to the suspension (0.08 to 0.5 mol/100 g zeolite). While the addition of tetra-alkylorthosilicate was clearly disclosed and could not be put into question by an apparently contradictory disclosure at the end of the description, the specification of a quantity range did not fulfil at least the third criterion for novelty of a selection of a new range, since the range was arbitrary.

Also claim 4 of the first set was not novel with respect to the disclosure of D1. With regard to the values of the ratios Si/Ti and H<sub>2</sub>O/Si, example 3 of D1 referred not only to example 1 of D2, but also to its general disclosure. Even if the values of the Si/Ti and H<sub>2</sub>O/Si ratios of example 1 of D2 were outside the ranges in claim 4, the general part of D2 disclosed values falling in the claimed intervals.

*Inventive step*

- (h) The process of claim 1 according to the second set differed from the disclosure of D7 as closest prior art only in that the suspension subjected to spray-drying was the suspension directly resulting from the synthesis of zeolite and containing tetra-alkylammonium hydroxide remaining in solution. In D7 instead the suspension

resulting from the synthesis underwent further treatments and was mixed with an aqueous solution of oligomeric silica and alkyl-ammonium hydroxide before being subjected to spray-drying. The problem to be solved was therefore the simplification of the process and the reduction of the materials used therein. It was not correct to refer in the formulation of the problem also to the mechanical stability of the product, since no comparative data on mechanical stability had been shown. The solution to the posed problem was to be found in D5, which concerned a similar process comprising spray-drying of a mixture containing zeolites and silicates, dealt with the issue of utilising unused silica present in the reaction mixture and suggested to add the silica precursor directly to the mixture resulting from the synthesis of zeolite before spray-drying. By applying this teaching to the process of D7 the skilled person would automatically come to the claimed process obtaining thereby not only a reduction of the materials used in the process, but also the desired simplification. The fact that the general disclosure in D5 mentioned the possibility of separating the templating agent before spray-drying and that some intermediate steps were disclosed in the examples of D5 was not relevant, as these were only possible options and the general teaching of D5 towards simplification of the process was clear. Moreover, since the synthesis mixture of D7 contained an excess of tetra-alkylammonium hydroxide, some of it was necessarily present in the suspension resulting from the synthesis and it was clear to the skilled

person that there was no need to add more. In addition also documents D16, D17 and D18 showed a reduced number of steps and no separation of the zeolite from the synthesis mixture before drying. For all these reasons, the claimed process was not inventive.

- X. The arguments of the respondents (patent proprietors) concerning the main request can be summarised as follows:

*Admissibility of the main request*

- (a) The main request was filed more than ten days before the oral proceedings and contained only minor amendments in the dependent claims, so that its analysis did not require any additional effort when compared with the main request underlying the decision under appeal. It should therefore be admitted into the proceedings.

*Admissibility of two sets of claims for different contracting states*

- (b) Since Article 54(4) EPC 1973 still applied, it was not correct to apply the Implementing Regulation to the EPC 2000 with regard to this Article. Therefore Rules 23a and 87 EPC 1973 still applied and the filing of a separate set of claims for the contracting states CH, DK, LI and LU, which were not designated in Document D1 (prior art under Article 54(3) EPC), was admissible.

*Request of referral to the Enlarged Board of Appeal*

- (c) The legal framework related to the possibility of filing two separate set of claims for different contracting states was clear and there was no contradictory case law with regard to this point of law. Therefore, no problem existed to be referred to the Enlarged Board of Appeal.

*Amendments - Rule 80 and Article 123(2) EPC*

- (d) The specification that the suspension contains "zeolite crystals and tetra-alkylammonium hydroxide remaining in solution" rendered explicit a feature which was relevant for the analysis of inventive step and therefore could not be objected to under Rule 80 EPC. The other objected amendments were minor changes which were necessary in view of the first one in order to make the whole wording of the claims clear.
- (e) Claims 1 and 3 of the first set were based on original claims 1, 3 and 5 and claims 1, 5 and 7 in combination with the original description. In particular, there was no direct link in the original application between the quantity of tetra-alkylorthosilicate to be added to the suspension and a specific type of tetra-alkylorthosilicate, nor between spray-drying and a specific temperature range.

*Sufficiency of disclosure*

- (f) The design of a spray-drier belonged to the knowledge of the person skilled in the field, who was able through simple tests on a pilot plant to dimension the apparatus in order to obtain a product with the required features. In addition, the use of tetra-alkylammonium hydroxide in excess implied that a part of it remained in solution at the end of the synthesis. On this basis and in the absence of facts and evidence on the side of the opponents, the requirement of sufficiency of disclosure was met.

*Novelty*

- (g) The teaching in D1 regarding the addition of tetra-alkylorthosilicate to the suspension resulting from the synthesis was contradictory, since it was mentioned in one instance and it was explicitly indicated as undesired in a second one. In any case no teaching at all was present about the amount of tetra-alkylorthosilicate to be added to the suspension. In the absence of any disclosure of a range the criteria for novelty of selection inventions did not apply and novelty of claim 1 of the first set with respect to the disclosure of D1 had to be acknowledged.

With regard to claim 4 of the first set, D1 did not disclose any values belonging to the specific ranges given for the Si/Ti and H<sub>2</sub>O/Si ratios. The only teaching in D1 with regard to the composition of the reactant mixture was the one of example 3

which referred to example 1 of D2. The values of the Si/Ti and H<sub>2</sub>O/Si ratios of example 1 of D2 were outside the ranges in claim 4 and no other part of D2 could be considered in the analysis of novelty with respect to D1.

*Inventive step*

- (h) The process of claim 1 according to the second set differed from D7 as the closest state of the art in that it included the direct feeding of the suspension resulting from the synthesis of zeolite to the spray-drier, no tetra-alkylammonium hydroxide was added to the suspension (as it was already present in solution) and either no addition or an addition of tetra-alkylorthosilicate as such was comprised before spray-drying. In D7 a number of intermediate steps including purification, washing, resuspension and recrystallisation were included and a solution of tetra-alkylorthosilicate and tetra-alkylammonium hydroxide was added to the suspension before spray-drying. The problem to be solved with respect to D7 was that of finding a simplified process for preparing catalysts comprising zeolites and oligomeric silica having a high mechanical resistance, avoiding any intermediate passage of filtration, washing and/or purification, namely of separation of the zeolite crystalline phase from the suspension at the end of the synthesis of the zeolite. There was no hint to combine the teaching of D5 with the one of D7 in order to solve such a problem. In any case, the claimed solution was inventive even in view of D5,

since it had features which were in contradiction with the process of D7 and it did not teach the missing features. In the process of D5 the templating agent could be absent and, if it was present, it had to be removed before spray-drying. Moreover, the only mentioned templating agent was n-alkylamine. In addition, the processes in the examples of D5 included several intermediate steps before spray-drying. There was no teaching therefore in D5 to directly feed the suspension resulting from the synthesis and containing the templating agent to the spray-dryer. Moreover, the spray-dried product of D5 had no satisfactory mechanical stability, since it had to be incorporated into a suitable inorganic oxide matrix to obtain satisfactory resistance to attrition. D16, D17 and D18 also did not teach the missing features and had instead several differences with the claimed process. For these reasons, the claimed process was inventive with respect to the available prior art.

XI. The appellants (opponents 01 and 02) requested that the decision under appeal be set aside and that the European patent be revoked.

In addition appellants 01 requested that the questions of law submitted by letter of 24 November 2008 and revised by letter of 21 September 2009 be referred to the Enlarged Board of Appeal.

XII. The respondents (patent proprietors) requested that the decision under appeal be set aside and the patent be maintained for the contracting states BE, DE, ES, FR,

GB, NL on the basis of claims 1 to 17 of the main request for those states filed with letter of 20 April 2011 and for the contracting states CH, DK, LI and LU on the basis of claims 1 to 18 of the main request for those states filed with letter of 20 April 2011 and the respective descriptions as underlying the decision of the opposition division. Alternatively, it was requested to maintain the patent on the basis of auxiliary requests 1 to 8 filed with letter of 20 April 2011, the auxiliary requests being valid for all contracting states.

## **Reasons for the Decision**

1. The appeals are admissible.

### *Admissibility of the main request*

2. The claims of both sets of the main request filed with letter of 20 April 2011 differ from the claims of the two sets of the main request underlying the appealed decision only in that a number of dependencies not appearing in the claims as granted and some repetitions in the dependent claims have been deleted, so as to render moot some objections under Rule 80 EPC which had been raised by the appellants.
  - 2.1 Since they do not involve any change in the independent claims, they do not change the analysis related to the requirements of Article 123(2) EPC, sufficiently of disclosure, novelty and inventive step. On this basis they do not require any additional effort to be dealt with and they do not raise therefore any issue which



the Board or the appellants cannot be expected to deal without adjournment of the oral proceedings (Article 13(3) of the Rules of Procedure of the Boards of Appeal).

- 2.2 In view of this the Board admits the main request filed with letter of 20 April 2011 into the proceedings.

*Admissibility of two sets of claims for different contracting states*

3. D1 is a European patent application with a validly claimed priority date (its priority document is identical to the application as filed) which is prior to the priority date of the patent in suit and a publication date which is after the filing date of the patent in suit. It belongs therefore to the state of the art under Article 54(3) EPC.
- 3.1 The present patent was granted before the date of entry into force of the EPC 2000. By virtue of Article 1 of the Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act revising the EPC of 29 November 2000 (Special edition No.1 of OJ EPO 2007, 197), Article 54(4) EPC 1973 still applies.
- 3.2 According to Rule 23a EPC 1973, which is an implementing regulation of Article 54(4) EPC 1973, D1 is only state of the art with respect to novelty for the common contracting states for which the designation fees have been validly paid (BE, DE, ES, FR, GB, NL). In order to establish novelty with respect to document D1 the patent proprietors filed a first set of claims

for these states and a second set for the further contracting states designated in the patent in suit (CH, DK, LI, LU). Since the admissibility of a second set of claims has been objected to by the opponents, the legal framework relating to the possibility of filing different claims, description and drawings for different states needs to be analysed.

3.3 Article 2, first sentence, of the Administrative Council's decision of 7 December 2006 amending the Implementing Regulations to the EPC 2000 (Special edition No.1 of OJ EPO 2007, 89) reads: "The Implementing Regulations to the EPC 2000 shall apply to all European patent applications, European patents, ..., in so far as the foregoing are subject to the provisions of the EPC 2000."

3.4 In decision J 10/07 (OJ EPO 2008, 567) the Legal Board of Appeal stated that this can only mean that a Rule of the Implementing Regulations to the EPC 2000 is to be applied where, or in so far as, the European patent application in question is subject to the Article of the EPC 2000 to which that Rule relates and which is specified and supplemented by it. Otherwise, irresoluble contradictions and legal discrepancies would arise between the applicable Articles of the EPC 1973 and the applicable provisions of the Implementing Regulations to the EPC 2000, which cannot have been the legislator's intention (point 1.3 of the Reasons).

3.5 In J 3/06 (*supra*) the Legal Board stated further that in an assessment of which Article relates to a particular Rule, it should be noted that a Rule in the Implementing Regulations can affect different EPC

Articles in very different ways. Within the meaning of the provision, a Rule does not apply to an Article purely by virtue of mentioning that Article. However, a Rule in the Implementing Regulations can be assumed to apply to a particular EPC 2000 Article when it puts a more detailed construction on that Article, in keeping with the purpose of "implementing" the EPC (point 3 of the Reasons).

3.6 According to Article 7 of the Act revising the EPC (Special edition No.1 of OJ EPO 2007, 196) in connection with the Administrative Council's decision of 28 June 2001 on the transitional provisions (*supra*), Article 54(4) EPC 1973 shall continue to apply to European patents granted before 13 December 2007, while Article 123 EPC 2000 is applicable to patents granted before that date. This has not been contested. The point of dispute rather is whether or not Rule 87 EPC 1973 is a Rule implementing Article 54(4) EPC 1973 and consequently could be applied, or whether the situation is covered by Article 123 and Rule 138 EPC. Indeed Rule 87 EPC 1973 allows different claims, description and drawings for different states both in the case of an earlier European patent application which is part of the state of the art under Article 54(3) and (4) EPC 1973 and when a prior national right exists, while Rule 138 EPC 2000 foresees only the latter case.

3.7 As set out by the Legal Board of Appeal, a Rule can affect different Articles and this Board does not deny that Rule 87 EPC 1973 also affects Article 123 EPC. However the clear purpose of Rule 87 EPC 1973 is to take account of the situation that a conflicting application constitutes prior art only for some and not

for all designated states. It governs the procedure when this situation arises and thus is clearly linked to Article 54(4) EPC 1973. A Rule does not only implement an Article when it defines its substance in more detail, like Rule 23a EPC 1973 does by setting up a condition for the territorial scope of the conflicting application, but also when it provides a procedure to enforce the substance of the Article.

- 3.8 If one did not allow a separate set of claims, the patent proprietor would have to limit his patent for all designated states. This would mean that the conflicting application had effect for all designated states. This is the situation under the EPC 2000 which, however, in the present case is not yet applicable. Not providing a procedure to enforce what is laid down in Article 54(4) EPC 1973 is in contradiction to the legislator's intention because it would make Article 54(4) EPC 1973 redundant. Thus Rule 87 EPC 1973 is applicable and a separate set of claims for the contracting states CH, DK, LI and LU is admissible.

*Referral to the Enlarged Board of Appeal*

4. According to Article 112(1)(a) EPC 1973 EPC the Board of Appeal shall refer a point of law to the Enlarged Board of Appeal in order to ensure uniform application of the law or if a point of law of fundamental importance arises and if it considers that a decision of the Enlarged Board is required.
- 4.1 Appellants 01 seem to suggest that coming to the conclusion that Rule 87 EPC 1973 was a Rule implementing Article 54(4) EPC 1973 instead of

Article 123 EPC was contradictory to the jurisprudence of the Legal Board of Appeal in J 3/06 (*supra*). The Board does not see such a contradiction. In J 3/06 (*loc. cit.*) the Legal Board clearly said that a Rule can affect different EPC Articles and that a Rule can be assumed to apply to a particular Article when it puts a more detailed construction on that Article, in keeping with the purpose of "implementing" the EPC. The present Board followed this line and came to the conclusion that the purpose of Rule 87 EPC 1973 is to provide a procedure for the situation underlying Article 54(4) EPC 1973 and thus implements this Article. Furthermore, from this it follows that the questions appellant 01 wanted to have referred to the Enlarged Board of Appeal are irrelevant because they concern Article 123 EPC which does not play a role for answering the relevant question of whether or not a separate set of claims is admissible.

- 4.2 For these reasons, the Board does not consider that a decision of the Enlarged Board of Appeal is required.

*Amendments - Rule 80 and Article 123(2) EPC*

5. The patent proprietors decided to amend all independent claims by specifying that some tetra-alkylammonium hydroxide remains in solution in the suspension resulting from the synthesis of zeolite and argued that the amendment played a role for the inventiveness of the claim. This was objected to by the opponents, who considered this feature as implicit in the claimed process.

5.1 The Board considers that there is no evidence either based on the patent in suit or on the available prior art, which could lead to the conclusion that such a feature is already necessarily implied by the wording of the claim. In particular, the claim does not specify that tetra-alkylammonium hydroxide needs to be present in excess in the reagent mixture used for the synthesis of zeolite. Moreover, the passages of D2 and D6 cited by the opponents (see D2, column 3, line 27 and D6, page 234, Chemical composition) refer to zeolites with a specific chemical composition which implies a specific quantity of tetra-propylammonium hydroxide, but they do not contain any general information which allows to determine what happens in the reacting systems defined in the independent claims of the main request.

5.2 The specification that some tetra-alkylammonium hydroxide remains in solution in the suspension resulting from the synthesis of zeolite constitutes therefore a limiting amendment occasioned by a ground of opposition (lack of inventive step) and cannot be objected to under Rule 80 EPC.

5.3 Once this has been established, the specific way in which the limitation is expressed (in particular by defining the essential ingredients of the suspension through the wording "containing zeolite crystals and tetraalkylammonium hydroxide remaining in solution") lies within the discretion of the proprietor and cannot be objected to either under Rule 80 EPC. The same applies to further minor amendments which are a consequence of the main amendment, namely the addition of the word "suspension" and "said suspension" which

- are necessary to keep the meaning of the claim clear after the term "suspension" and the relative pronoun "to which" have been separated by means of the amendment.
- 5.4 The requirements of Rule 80 EPC are therefore met.
6. Claim 1 of the first set corresponds to original claim 3 (dependent on original claim 1) with the addition that the suspension resulting from the synthesis of the zeolite contains "zeolite crystals and tetraalkylammonium hydroxide remaining in solution" and that the rapid drying is "effected by feeding to a spray-drier".
- 6.1 The original description discloses in its general part that "zeolite crystals and tetraalkylammonium hydroxide remaining in solution, are present" in the suspension resulting at the end of the synthesis (page 4, lines 9 to 12) and that the "rapid drying of the suspension is preferably carried out by feeding to a spray-drier" (page 6, lines 18 to 19). These specifications apply to all embodiments of the invention, so that claim 3 in combination with the cited passages of the description gives an unambiguous basis for claim 1 of the first set.
7. Similarly claims 3, 4, 5 and 6 of the first set are based on original claims 7, 8, 11 and 14 respectively (all dependent on claim 1) in combination with the above cited passages on pages 4 and 6 concerning the presence of tetra-alkylammonium hydroxide in solution and the accomplishment of the rapid drying by feeding to a spray-drier.

7.1 The fact that claim 1 of the first set was limited to a specific quantity of tetra-alkylorthosilicate to be added to the suspension with the intention to establish novelty with respect to D1 (see point 9.2 below) does not change the fact that original claim 1 as well as original claims 7, 8, 11 and 14, which together with the above cited passages on pages 4 and 6 give a basis to claims 3, 4, 5 and 6 of the first set respectively, were not limited with respect to the quantity of tetra-alkylorthosilicate to be added to the suspension. The absence of such a limitation in claims 3, 4, 5 and 6 of the first set does not give rise therefore to any infringement of the requirements of Article 123(2) EPC.

7.2 The passage in the original description on page 6, lines 8 to 13, which specifies that when "tetra-alkylorthosilicate is added to the suspension resulting from the synthesis of zeolite, before this is subjected to rapid drying, it will be added in a quantity ranging from 0.08 to 0.50 moles per 100 grams of zeolite contained in the suspension" is not in agreement with amended claims 3, 4, 5 and 6 of the first set. Its deletion in paragraph [0006] of the version of the description adapted to the first set is therefore a correct adaptation, which does not result in any infringement of the requirements of Article 123(2) EPC.

*Sufficiency of disclosure*

8. The allegation of the appellants that the invention was not sufficiently disclosed with reference to the spray-drying step and to the presence of tetra-alkylammonium hydroxide remaining in solution at the end of the zeolite synthesis was not supported by any facts.



- 8.1 Spry-drying is a known and common technique in the field of zeolite production and no evidence was provided that it should pose technical difficulties to the skilled person, so as to result in an undue burden. Moreover, the specific dimensions of the microspheres, which have been cited by the opponents as requiring additional technical information to be obtained, do not appear as a required product feature in any of the claims.
- 8.2 As to the tetra-alkylammonium hydroxide remaining in solution at the end of the zeolite synthesis, this feature can only be understood as corresponding to the use of the templating agent in excess during the synthesis step (see paragraph [0005] in the patent). If this is done, some tetra-alkylammonium hydroxide will necessarily remain in solution at the end of the synthesis.
- 8.3 For these reasons, it is considered that the objections under Article 100(b) EPC are not well founded.

#### *Novelty*

9. Document D1 is prior art under Article 54(3) EPC and by virtue of Article 54(4) and Rule 23a EPC 1973 (see point 3 above) it is only relevant for the common contracting states for which the designation fees have been validly paid, namely BE, DE, ES, FR, GB, NL. Therefore, it belongs to the state of the art only as far as novelty of the claims of the first set is concerned.

- 9.1 Since it is not relevant for inventive step, a full analysis of the document is not necessary in the present decision, but it is sufficient to determine whether there is at least one feature in each of the independent claims of the first set which have been attacked by the opponents under lack of novelty (claims 1 and 4), which is not disclosed in D1.
- 9.2 With regard to claim 1 of the first set, the quantity of tetra-alkylorthosilicate to be added to the suspension resulting from the synthesis of zeolite has been identified by the parties as the disputed feature.
- 9.2.1 D1 discloses that binders or pore producers such as tetra-alkylorthosilicate, silica sol, pyrogenic silica (Aerosil), tetra-n-propylammonium hydroxide, tylose and pentaerythritol may be added to the suspension resulting from the synthesis of zeolite (page 3, lines 54-56). No other passage is present in D1 referring to the addition of tetra-alkylorthosilicate, nor any tetra-alkylorthosilicate is added to the suspension resulting from the synthesis of zeolite in the examples.
- 9.2.2 Therefore no range is disclosed in D1 related to the quantity of tetra-alkylorthosilicate to be added. This cannot be interpreted as the implicit disclosure of a very broad range from which a sub-range has been chosen in claim 1 of the first set, since tetra-alkylorthosilicate is a minor ingredient for which no indication has been given and any choice of a (broad or narrow) range would be an activity of the person skilled in the art, which goes beyond the direct and unambiguous disclosure in the document.

9.2.3 The specification that the tetra-alkylorthosilicate is added in a quantity ranging from 0.08 to 0.50 moles per 100 grams of zeolite contained in the suspension resulting from the synthesis in claim 1 of the first set is therefore not to be seen as the selection of a sub-range out of a previously known range, but as the addition of a limiting feature, which was not disclosed in D1 and is sufficient to provide novelty.

9.3 With regard to claim 4 of the first set, the disputed features concern the ranges for the Si/Ti and the H<sub>2</sub>O/Si ratios in the reacting mixture for the synthesis of zeolite.

9.3.1 D1 does not disclose any detail of the quantities of the components present in the reacting mixture in the general part of the description. The only example in which a synthesis mixture according to the invention of D1 is described is example 3 of D1, which refers to example 1 of D2, as far as the synthesis mixture is concerned.

9.3.2 Since example 3 of D1 contains a specific reference to example 1 of D2, in accordance with the case law (see Case Law of the Boards of Appeal of the EPO, 6th edition 2010, I.C.3.1) only the part of D2 corresponding to that specific reference (example 1) is to be considered as part of the disclosure of D1.

9.3.3 Both parties agreed, however, that the values of the Si/Ti and H<sub>2</sub>O/Si ratios of example 1 of D2 are outside the ranges in claim 4 of the first set.

9.3.4 This is true without doubts for the Si/Ti molar ratio which derives from 455 g of tetra-ethylorthosilicate and 15 g of tetra-ethyltitanate (D2, column 4, lines 1 to 6), which corresponds to a molar ratio of 33.2 (as computed by the patent proprietors by taking into account the molecular weight of tetra-ethylorthosilicate and tetra-ethyltitanate, see their statement setting out the grounds of appeal, page 35, and not disputed by the opponents). On this basis it must be concluded that D1 does not disclose directly and unambiguously at least values of the Si/Ti ratio in the reacting mixture for the synthesis of zeolite falling within the range of claim 4 of the first set.

9.3.5 Since a difference has been identified, it is not necessary to enquire whether also the H<sub>2</sub>O/Si ratio of example 1 of D2, whose computation requires the understanding of what happens during the heating and evaporation step of the initial mixture before mixing with further water to obtain the reacting mixture (D2, column 4, lines 6-14), also falls outside the range of claim 4 of the first set.

9.4 For these reasons, both claim 1 and claim 4 of the first set are novel with respect to the disclosure in D1.

9.5 No other objection of lack of novelty was raised by the opponents and no other document was cited with respect to novelty. This issue (in particular with regard to the claims of the second set) does not need therefore any further consideration by the Board.

*Inventive step*

10. Inventive step of the process of claim 1 according to the second set is analysed first, since this claim covers the broadest scope of protection.

10.1 With respect to this claim, which concerns a process for the preparation of zeolitic catalysts in the form of microspheres, comprising zeolite and oligomeric silica, all parties considered D7 as the closest state of the art. The Board sees no reason to depart from this choice.

10.2 Document D7 relates to bonded zeolites and to a process for producing them (page 2, line 1) and discloses a process for producing zeolites bonded with oligomeric silica, comprising mixing a suspension of said zeolite in water with an aqueous solution of oligomeric silica and alkyl-ammonium hydroxide, and submitting to quick drying the so-obtained suspension, whereby the suspension and the solution have specific compositions and the zeolites are selected from:

- 1) a calcined and anhydrous zeolite,
- 2) a calcined, anhydrous zeolite preferably exchanged with ammonium ions,
- 3) a damp zeolite containing as the counter-cations, ammonium or alkyl-ammonium cations, optionally in the presence of an excess of the related hydroxides, as it is obtained by means of a hydrothermal treatment, without carrying out a final calcination thereof (claim 1 and page 2, lines 8 to 22).

10.2.1 The solution is prepared in particular by hydrolysing in the liquid phase a tetra-alkylorthosilicate in an

aqueous solution of alkyl-ammonium hydroxide (page 2, lines 28 to 31), which is preferably tetrapropylammonium hydroxide (page 2, lines 25-27). In all the examples disclosing bonded zeolites (examples 2, 4, 6, 8, 9, 11, 13 and 15 on pages 8 to 13) quick drying is accomplished by feeding the suspension to a spray-drier, thereby obtaining compact microspheres, and calcining the atomised product.

10.2.2 Examples of damp zeolites as obtained by means of a hydrothermal treatment without carrying out the final calcination thereof according to the third embodiment of claim 1 of D7 are given (pages 8 to 13) in examples 1, 3, 5, 10, 12 and 14 (preparation of the zeolites) in combination with examples 2, 4, 6, 11, 13 and 15 respectively (preparation of the bonded zeolites). In all cases hydrothermal treatment at autogenous pressure of a reagent mixture containing tetra-alkylammonium hydroxide as templating agent is accomplished for the crystallization of the zeolite followed by centrifugation, washing by dispersion in water and re-centrifugation. It is then the washed centrifugation cake which is dispersed into a clear solution of tetra-ethylorthosilicate and tetrapropylammonium hydroxide to obtain the suspension which is subjected to spray-drying.

10.3 The suspension which is subjected to spray-drying in D7 contains therefore zeolite crystals, tetra-alkylammonium hydroxide in solution and tetra-alkylorthosilicate as the suspension subjected to spray-drying of the process of claim 1 of the first set, but contrary to that it does not result from the synthesis of the zeolite by hydrothermal treatment at

autogenous pressure of the reagent mixture containing tetra-alkylammonium hydroxide as templating agent with the optional addition of tetra-alkylorthosilicate, but from the dispersion of a washed centrifugation cake from a zeolite synthesis into a solution of tetra-alkylorthosilicate and tetra-alkylammonium hydroxide.

10.4 It is the object of the patent in suit to provide a simplified process for preparing catalysts comprising zeolites and oligomeric silica having a high mechanical resistance (paragraph [0003] in the patent).

10.4.1 There can be no doubts that the claimed process represents a simplification with respect to the process of D7. No treatment of the suspension resulting from the synthesis of zeolite and no further addition of a solution of tetra-alkylorthosilicate and tetra-alkylammonium hydroxide is indeed necessary. As to the mechanical resistance of the bonded zeolitic catalyst, while it is true that no data are available which allow a comparison between the mechanical resistance of the claimed catalyst with that of the product of D7, in examples 1 to 3 of the patent in suit the particle distribution of the microspheres obtained by the claimed process has been measured at the end of the production process and after treatment for one hour in ultrasounds and it has been observed that the particle distribution is not modified after the ultrasound treatment, so as to allow to conclude that the catalyst has good mechanical resistance.

10.5 The technical problem to be solved with respect to D7 can thus be seen as the provision of a simplified process for preparing catalysts comprising zeolites and

oligomeric silica having a satisfactory mechanical resistance. Having regard to the available information, the Board is convinced that the problem has been solved by the subject-matter of claim 1 of the second set.

10.6 Document D5 discloses a method for preparing an inorganic oxide matrix bound porous crystalline silicate comprising preparing said silicate from a reaction mixture which comprises a source of silicon and water, thereafter adding to said reaction mixture which contains unincorporated silica, as well as the crystalline silicate, an inorganic oxide matrix precursor comprising a source of inorganic oxide matrix and water and drying the resulting mixture to produce an inorganic oxide matrix-bound porous crystalline silicate (column 3, lines 6 to 17). By this method, unincorporated silica in the reaction mixture is incorporated in the inorganic oxide matrix (column 3, lines 17 to 19).

10.6.1 The drying step can be accomplished by any suitable means, such as spray-drying (column 3, lines 38 to 42). Any suitable organic directing agent may be used, n-alkylamine being particularly preferred (column 3, lines 33 to 35). Generally, the organic directing agent employed in the zeolite formation can be essentially removed by any suitable technique prior to adding said matrix precursor, e.g. by flashing (column 3, lines 44 to 47).

10.7 While the idea of using unincorporated silica from the synthesis mixture may be found in D5, addition of a further source of inorganic oxide matrix and water is a necessary step of the process disclosed therein.



Moreover, an organic agent is not necessarily present and, in case it is, it is generally removed before the addition of the matrix precursor (and therefore before spray-drying). In addition, tetra-alkylammonium hydroxides are not mentioned in D5.

- 10.8 In view of this a hint cannot be found in D5 that in order to solve the posed problem the suspension resulting from the zeolite synthesis of D7 and containing tetra-alkylammonium hydroxide in solution can be directly fed to spray-drying without the addition of a solution of tetra-alkylorthosilicate and tetra-alkylammonium hydroxide (which is a compulsory step in D7) and with the optional addition of tetra-alkylorthosilicate alone.
- 10.9 Such a hint cannot be found in D16, D17 and D18 either.
- 10.9.1 D16 discloses a process involving admixture of an aqueous slurry comprising a cogel of hydrous silica and one or more hydrous metal oxides, preferably a silica-alumina cogel, with the mother liquor containing precipitated zeolite crystals obtained from a zeolite crystallization step, and the subsequent evaporation of water, e.g. by spray-drying, from the resulting fluid slurry mixture to form the desired zeolite-cogel matrix composite product comprising zeolite crystals embedded in the desired cogel (column 3, lines 6 to 17). In this way, a distinct separation of the zeolite product crystals from their mother liquor is not required (column 2, line 68 to column 3, line 1).
- 10.9.2 D17 discloses a process for producing catalysts including a crystalline aluminosilicate zeolite

dispersed in an inorganic oxide matrix (page 1, first paragraph), comprising mixing silica, aluminium oxide, sodium oxide and water with zeolite crystallisation seeds, allowing crystallisation of the zeolite, diluting with water, mixing with an acid component in order to cause gelification of the sodium silicate and spray-drying the gelled composition in order to obtain the desired particles (page 3, last paragraph to page 5, first paragraph). In this way the unreacted materials of the reaction mixture are transformed into a gel (page 3, first paragraph).

10.9.3 D18 discloses a process for preparing granulated components based on zeolites for synthetic surfactants including mixing of solutions of sodium silicate and sodium aluminate, hydrothermal crystallisation of the obtained aluminosilicate-hydrogel und spray-drying of the zeolite suspension in its mother liquor (claim 1, German translation).

10.10 While the idea of spray-drying the mother liquor of a zeolite synthesis process can be found in these documents (admixed with a silica-alumina cogel in D16 and after gelification in D17), none of them discloses a synthesis process including organic templating agents as the one of claim 1 of the second set and the one disclosed in D7. Their teaching therefore cannot be applied to D7 and cannot hint to the direct feeding to spray-drying of the suspension resulting from the zeolite synthesis of D7 and containing tetra-alkylammonium hydroxide in solution without the addition of a solution of tetra-alkylorthosilicate and tetra-alkylammonium hydroxide (which is a compulsory step in D7).

- 10.11 For these reasons, the process of claim 1 of the second set involves an inventive step having regard to the available prior art.
- 10.12 Claims 1, 3, 4, 5 and 6 of the first set concern processes for the preparation of zeolitic catalysts in the form of microspheres, which include all the features of the process of claim 1 of the second set together with further limitations. They involve therefore an inventive step *a fortiori* for the same reasons as detailed for claim 1 of the second set (see points 10.1 to 10.11 above).

*Adaptation of the description*

11. An adaptation of the description took place before the opposition division in view of the main request underlying the decision under appeal. Since the main request which has been analysed in the present decision differs from that main request only in minor amendments in the dependent claims, there is no need for a further adaptation.
- 11.1 The only objection to the adaptation of the description raised by the opponents has already been dealt with while analysing the amendments (see point 7.2 above) and has led to the conclusion that the requirements of the EPC are met. No further analysis of the adapted description is therefore necessary.

## 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 the following documents:

For the contracting states BE, DE, ES, FR, GB, NL

- Claims 1 to 17 of the main request for BE, DE, ES, FR, GB, NL filed with letter of 20 April 2011
- Description as underlying the decision of the opposition division (version for BE, DE, ES, FR, GB, NL)
- Drawings, sheets 1 to 4 of the patent specification

For the contracting states CH, DK, LI, LU

- Claims 1 to 18 of the main request for CH, DK, LI, LU filed with letter of 20 April 2011
- Description as underlying the decision of the opposition division (version for CH, DK, LI, LU)
- Drawings, sheets 1 to 4 of the patent specification

3. The request from appellants 01 for a referral to the Enlarged Board is rejected.

The Registrar

The Chairman

S. Fabiani

J. Riolo