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**D E C I S I O N**  
**of 7 May 2003**

**Case Number:** T 0268/99 - 3.3.7  
**Application Number:** 92103702.4  
**Publication Number:** 0502510  
**IPC:** B01J 23/78  
**Language of the proceedings:** EN

**Title of invention:**

Alkyl aromatic hydrocarbon dehydrogenation catalyst and production method thereof

**Patentee:**

Süd-Chemie Catalysts Japan Inc.

**Opponent:**

Shell Internationale Research Maatschappij B.V.

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 54, 123(2)

**Keyword:**

"Novelty - (no)"

"Disclaimer - contradiction to the original disclosure - not acceptable under Article 123(2) EPC, no reason to suspend the proceedings until decision of the Enlarged Board of Appeal in cases G 0001/03 and G 0002/03"

**Decisions cited:**

T 1071/97, T 0863/96, T 0507/99, T 0664/00, G 0001/03,  
G 0002/03, G 0009/92

**Catchword:**

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Case Number: T 0268/99 - 3.3.7

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.7  
of 7 May 2003

**Appellant:** Süd-Chemie Catalysts Japan, Inc.  
(Proprietor of the patent) 1-1, Yoyogi 2-chome,  
Shibuya-ku  
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**Representative:** Splanemann Reitzner Baronetzky Westendorp  
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**Respondent:** Shell Internationale Research  
(Opponent) Maatschappij B.V.  
Carel van Bylandtlaan 30  
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**Representative:** -

**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
15 January 1999 concerning maintenance of  
European patent No. 0502510 in amended form.

**Composition of the Board:**

**Chairman:** R. E. Teschemacher  
**Members:** B. J. M. Struif  
P. A. Gryczka

## Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 502 510 with respect to European patent application No. 92 103 702.4 filed on 4 March 1992 was published on 20 December 1995, on the basis of five claims, claim 1 reading as follows:

"An alkyl aromatic hydrocarbon dehydrogenation catalyst containing iron oxide, potassium oxide and titanium oxide as essential components wherein the iron oxide content is 40.0 to 90.0 wt.-%, the potassium oxide content is 5.0 to 30.0 wt.-% and the titanium oxide content is 0.005 to 0.95 wt.-% provided that all catalyst components are calculated as oxides, and said catalyst further contains either cerium oxide, molybdenum oxide and magnesium oxide or chromium oxide as promoter components."

Claims 2 to 4 were dependent on claim 1.

Independent claim 5 read as follows:

"A method for producing the catalyst according to claim 1, wherein the catalyst components oxides and/or catalyst component oxide precursor compounds are subjected to wet mixing and kneading followed by extrusion molding, and are subsequently dried and calcined."

II. A notice of opposition was filed against the granted patent, in which the revocation of the patent in its entirety was requested on the grounds of lack of novelty and lack of inventive step under Article 100(a)

EPC. The opposition was supported and supplemented during the opposition proceedings *inter alia* by the following documents:

D4: Interoffice Memorandum of Criterion Catalysts dated 12 November 1990 and extract from a laboratory journal dated 18 December 1990

D5: United Catalyst Inc., G-64 & G-84 Product Bulletin, pages 1 to 4

D12: Extract from laboratory journal with entry dated 20 November 1990

III. The decision of the opposition division was based on the claims as granted (main request) and three auxiliary requests. Claim 1 of the first auxiliary request read as follows:

"An alkyl aromatic hydrocarbon dehydrogenation catalyst containing iron oxide, potassium oxide and titanium oxide as essential components wherein the iron oxide content is 40.0 to 90.0 wt.-%, the potassium oxide content is 5.0 to 30.0 wt.-% and the titanium oxide content is 0.005 to 0.95 wt.-% provided that all catalyst components are calculated as oxides, and said catalyst further contains either cerium oxide, molybdenum oxide and magnesium oxide or chromium oxide as promoter components, **wherein the chromium oxide content is 1 to 5 wt.-%.**" (Emphasis added to the difference with claim 1 as granted).

Claim 1 of the second auxiliary request differed from the first one in that the titanium oxide content is "0.034 to 0.95 wt.-%".

Claim 1 of the third auxiliary request differed from the first one in that the titanium oxide content is "0.15 to 0.95 wt.-%".

The opposition division decided that the patent could be maintained in amended form on the basis of claims 1 to 5 according to the third auxiliary request. The decision was based on the following reasons:

- (a) The requests were considered to meet the requirements of Article 123(2) and (3) EPC.
- (b) The public prior use based on D4 in connection with D12 was acknowledged.
- (c) The claimed subject-matter of the main request lacked novelty over D4. The claimed subject-matter of the first and second auxiliary requests did not involve an inventive step.
- (d) Novelty of the claimed subject-matter of the third auxiliary request was accepted.
- (e) Regarding inventive step, D4 was considered to be the closest state of the art. The problem to be solved was to increase the activity and long-term stability and to maintain high selectivity. The cited prior art did not suggest that a specific amount of titanium oxide would solve that.

Thus, an inventive step was recognized for the third auxiliary request.

IV. On 15 March 1999 the proprietor (appellant) filed a notice of appeal against the above decision with simultaneous payment of the prescribed fee. In the statement setting out the grounds of appeal filed on 25 May 1999, the appellant requested that the patent be maintained as granted (main request) and submitted five auxiliary requests.

V. By letter dated 20 December 1999 the opponent (respondent) submitted *inter alia* the following document:

D13: EP-A-0 181 999

VI. In a communication dated 6 December 2002, the board indicated that D13 appeared to be *prima facie* a pertinent prior art document.

VII. By letter dated 4 April 2003, the appellant filed auxiliary requests I to IV replacing the previous auxiliary requests on file and submitted the following document:

D15: Ullmanns Enzyklopädie der technischen Chemie, 4th edition, vol. 24, 1983, pages 545 to 556

By letter of 30 April 2003, the respondent submitted pages 5 and 6 of document D5.

VIII. Oral proceedings were held on 7 May 2003. The appellant sought to introduce an auxiliary request restricting claim 1 of the main request by the further feature based on page 4, lines 27 to 28 of the description of the patent as granted that the titanium is added as titanium oxide or titanium compounds decomposable to titanium oxide at the final calcination step.

Auxiliary request II submitted with the letter dated 4 April 2003 was cancelled. Claim 1 according to the other auxiliary requests filed with that letter read as follows:

Auxiliary request I:

"An alkyl aromatic hydrocarbon dehydrogenation catalyst containing iron oxide, potassium oxide and **added titanium (not originating from Portland cement)** oxide as essential components wherein the iron oxide content is 40.0 to 90.0 wt.-%, the potassium oxide content is 5.0 to 30.0 wt.-% and the titanium oxide content is 0.005 to 0.95 wt.-% provided that all catalyst components are calculated as oxides, and said catalyst further contains either cerium oxide, molybdenum oxide and magnesium oxide or chromium oxide as promoter components."

Auxiliary request III:

"An alkyl aromatic hydrocarbon dehydrogenation catalyst containing iron oxide, potassium oxide and **added titanium (not originating from Portland cement)** oxide as essential components wherein the iron oxide content is 40.0 to 90.0 wt.-%, the potassium oxide content is

5.0 to 30.0 wt.-% and the titanium oxide content is 0.005 to 0.95 wt.-% provided that all catalyst components are calculated as oxides, and said catalyst further contains either cerium oxide, molybdenum oxide and magnesium oxide or chromium oxide as promoter components, **wherein the catalyst is obtainable by a method by which the catalyst components oxides and/or catalyst component oxide precursor compounds are subjected to wet mixing and kneading followed by extrusion molding, and are subsequently dried and calcined.**"

Auxiliary request IV:

"An alkyl aromatic hydrocarbon dehydrogenation catalyst containing iron oxide, potassium oxide and **added titanium (not originating from Portland cement) oxide** as essential components wherein the iron oxide content is 40.0 to 90.0 wt.-%, the potassium oxide content is 5.0 to 30.0 wt.-% and the titanium oxide content is 0.005 to 0.95 wt.-% provided that all catalyst components are calculated as oxides, and said catalyst further contains either cerium oxide, molybdenum oxide and magnesium oxide or chromium oxide as promoter components, **wherein the chromium oxide content is 1 to 5 wt.%. "**

(Emphasis added on the differences from claim 1 as granted).



IX. The appellant argued in substance as follows:

- (a) As regards novelty of the main request, examples 3 and 6 of D13 described Portland cement, which was used as a binder and as a source of calcium oxide. However, titanium oxide ( $\text{TiO}_2$ ) was contained in Portland cement as an impurity in form of an inactive silicate phase whilst in the claimed catalyst  $\text{TiO}_2$  was present as such in a distinct, catalytically active phase. The form, in which the titanium was added, was specified in the requested modification of the main request and provided a further difference over D13.

According to D15, in the production of Portland cement a melt was formed to convert  $\text{TiO}_2$  into silicate at a firing temperature of  $1450^\circ\text{C}$ . Thus, no distinctive catalytically active  $\text{TiO}_2$  phase could be present in Portland cement. The subject matter of granted claim 1 and of the auxiliary version modified according to page 4, lines 27 to 28 of the patent in suit was novel over D13.

- (b) The feature "not originating from Portland cement" in the auxiliary requests was directed to a distinction over the accidental disclosure of D13 and was thus allowable under Article 123(2) EPC. Reference was made to T 1071/97 dated 17 August 2000, cited in Case Law of the Boards of Appeal of the European Patent Office, 4th edition, 2001, III.A.1.6.3. The technical problem in D13 was to increase the stability of the catalyst in hot water and not to improve the activity of the catalyst as aimed at in the patent in suit.

(c) Regarding inventive step, D13 was considered to be the closest prior art. The problem to be solved over D13 was to increase the activity of the ethylbenzene dehydrogenation catalyst without sacrificing its selectivity. The examples of the patent in suit showed that the conversions at comparable temperatures were much higher than those obtained with catalysts according to D13. D13 did not provide any suggestion that titanium oxide present as impurity in Portland cement in catalyst 3 and 6 could exhibit any catalytical effect. Thus, the claimed subject matter involved an inventive step.

X. The arguments of the respondent, given in writing and at the oral proceedings, can be summarized as follows:

(a) As regards novelty of the main request, samples 3 and 6 of D13 disclosed all components of the claimed catalysts. The fact that in D13  $\text{TiO}_2$  was present as a component of Portland cement provided no distinction, since according to the patent in suit the titanium component could be added by any method and in any form. The appellant's argument, that titanium oxide was present in the claimed catalyst in a catalytically active form was not reflected by claim 1, since the claimed subject-matter included no functional limitation in this respect. Furthermore, a different catalyst had not been evidenced by experimental results. According to D15 Portland cement had a typical  $\text{TiO}_2$  content of 0.2 to 0.4 % by weight in line with D13.

(b) The auxiliary requests were objected to under Article 123(2) EPC, since the disclaimer "not originating from Portland cement" in claim 1 had not been disclosed in the application as filed. Furthermore, since D13 was considered as highly relevant when evaluating inventive step, the disclosure of D13 was not an accidental anticipation and the disclaimer was thus not allowable under the established case law.

(c) As regards inventive step, D13 was the closest state of the art. Apart from the disclaimer the additional features of the auxiliary requests provided no further distinction over the cited prior art. No improvement over D13 had been shown, since the experimental results of D13 and those of the patent in suit were not carried out under comparable conditions. Thus, the subject-matter of the auxiliary requests lacked an inventive step.

XI. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request). Auxiliarily, he requested to maintain the patent according to the auxiliary requests I, II or III as submitted in the letter dated 4 April 2003 or in the version held allowable in the decision under appeal.

XII. The respondent requested that the appeal be dismissed.

## Reasons for the Decision

1. The appeal is admissible

*Novelty (main request and the requested modification thereof)*

2. D13 describes a dehydrogenation catalyst on the basis of  $\text{Fe}_2\text{O}_3$  and  $\text{K}_2\text{O}$  obtainable by kneading and extrusion molding a water containing mixture of

- (a) 45 to 90 wt.-% of  $\text{Fe}_2\text{O}_3$  and/or at least one iron compound decomposable to  $\text{Fe}_2\text{O}_3$  (calculated as  $\text{Fe}_2\text{O}_3$ )
- (b) 5 to 40 wt.-%  $\text{K}_2\text{O}$  and/or at least one potassium compound decomposable to  $\text{K}_2\text{O}$  (calculated as  $\text{K}_2\text{O}$ )
- (c) 4 to 30 wt.%  $\text{MgO}$  and/or at least one magnesium compound decomposable to  $\text{MgO}$  (calculated as  $\text{MgO}$ )
- (d) 0 to 10 wt.-% of a chromium and/or manganese compound, calculated as  $\text{Me}_2\text{O}_3$
- (e) 0 to 10 wt.-% of a compound of cerium, molybdenum tungsten or mixtures thereof, calculated as the oxide which is the most stable under standard conditions and
- (f) 0 to 15 wt.-%  $\text{CaO}$  and/or at least one  $\text{CaO}$  containing or in  $\text{CaO}$  decomposable compound (calculated as  $\text{CaO}$ ),

drying the moldings and calcinating the dried moldings at a temperature of 500 to 750°C (claim 1).

The exemplified catalyst 6 contains 55.3 wt.-%  $\text{Fe}_2\text{O}_3$ , 14.6 wt.-%  $\text{K}_2\text{O}$ , 14 wt.-%  $\text{MgO}$ , 5.9 wt.-%  $\text{CeO}_2$ , 2.7 wt.-%  $\text{MoO}_3$  and 7.5 wt.-% Portland cement. Catalyst 3 contains 58.1 wt.-%  $\text{Fe}_2\text{O}_3$ , 25.1 wt.-%  $\text{K}_2\text{O}$ , 6.0 wt.-%  $\text{CeO}_2$ , 2.8 wt.-%  $\text{MoO}_3$  and 8.0 wt.-% Portland cement (table I, page 10). The composition of Portland cement includes 0.3 wt.-%  $\text{TiO}_2$  and 0.9 wt.-%  $\text{MgO}$  (table I, footnote). If the amount of  $\text{TiO}_2$  is calculated on the basis of such a catalyst composition,  $\text{TiO}_2$  is present in catalyst 3 in an amount of 0.024 wt.-% and in an amount of 0.0225 wt.-% in catalyst 6.

D15 discloses a typical composition of Portland cement which overlaps with the composition range of the Portland cement cited in D13 (D15, page 457, table 1). In particular, an identical average amount of  $\text{TiO}_2$  (0.3 wt.-%) is mentioned. Furthermore, the phase composition of a cement clinker is specified in table 2 (D15, page 549). Table 2 mentions only the main components of Portland cement and does not indicate the presence of titanium oxide. However, it cannot be derived from the absence of  $\text{TiO}_2$  in that table in which form titanium is bonded. Although Portland cement is prepared by heating the raw material mixture to a temperature of  $1450^\circ\text{C}$ , by which a melt is produced to break down coarse silica and limestone grains (page 552, point 3.4.1), there is no indication that titanium may be present in any other form than  $\text{TiO}_2$  or that it may be present in a silicate phase, which would be catalytically inactive.

2.1 The appellant argued that the granted claim 1 provided a distinction over D13, because  $\text{TiO}_2$  was present as a distinctive catalytically active phase whilst in the catalysts of D13,  $\text{TiO}_2$  came from the Portland cement in which it was present as an impurity in form of an inactive silicate phase.

Claim 1 as granted specifies the essential components of the dehydrogenation catalyst namely iron oxide, potassium oxide and titanium oxide and further catalyst promotor components. The content of the catalyst components is defined by weight percentages calculated as oxides (claim 1 and page 4, lines 18 to 20). The appellants' allegation that titanium oxide in the claimed catalyst is present in a specific catalytically active phase is not supported by the wording of claim 1 as granted, because it does not define any structural limitation in this respect.

2.2 It is undisputed that in catalysts 3 and 6 of D13 iron oxide, potassium oxide and the catalyst promotor components cerium oxide, molybdenum oxide and magnesium oxide are present within the amounts of claim 1. Questionable is, whether the definition in claim 1, that titanium oxide is present as an essential element of the catalyst and that its content, calculated as oxide, is 0.005 to 0.95% by weight, provides a distinction over D13.

In that respect the patent specification states: "The amount of titanium oxide added as another component is in the range of 0.005 to 0,95 wt.% (with all components calculated as oxides) irrelevant (spelling error:

irrelevant) of the adding method or form of titanium compound to be added (page 4, lines 18 to 20).

2.2.1 According to D13, Portland cement is used as a hydraulic binder to improve the strength of the dry catalyst and has no effect on the steam stability. The binder will be used as source of component (f) (page 6, lines 5 to 10). There is no hint in D13 that in Portland cement titanium is present in any other form than the specified titanium oxide ( $\text{TiO}_2$ ), which is identically defined in claim 1 as granted. In fact the composition of Portland cement is mentioned on page 10, where it is specified to contain 0.3% of  $\text{TiO}_2$ . This percentage of titanium oxide in Portland cement provides a content of 0.0225 and 0.024 wt.-%, calculated as  $\text{TiO}_2$ , respectively, in the final catalysts 3 and 6 of D13. These amounts are more than four times higher than the lowest claimed value of 0.005 wt.-%. Since catalysts 3 and 6 of D13 contain  $\text{TiO}_2$  as an identical component within the claimed amount, it must be concluded, in the absence of information to the contrary, that it has the same catalytical effect as the claimed subject-matter. Hence, the definition in claim 1 as granted provides no distinction over D13.

2.2.2 The appellant argued that titanium oxide in Portland cement is present as a catalytically inactive silicate phase.

In D13 Portland cement is present in a comparative example (catalyst 3) and in an example of the invention (catalyst 6). As shown by table II of D13, it does not exhibit a negative effect on the catalytical activity. Furthermore, the catalytical activity and selectivity

shown in D13 are measured at a steam to ethylbenzene mole ratio of 7:1 (see page 11). The activity and selectivity in the patent in suit is measured at a H<sub>2</sub>O/ethyl benzene weight ratio of 2.0 to 1 (page 5, line 35) which corresponds to a mole ratio of 11.1 : 1. According to D5, a higher mole ratio of steam to ethylbenzene increases the selectivity and the conversion (see Figure 1, page 5). Since the mole ratio of steam to ethylbenzene in the patent in suit is higher than in D13, the results presented in the patent in suit may show for this reason alone a higher selectivity and activity than those of D13 independently of the catalyst used. However a reliable comparison in respect of the catalytical effect of titanium oxide between the test results in D13 and of the patent in suit cannot be made, as they were not obtained under comparable conditions. Consequently, no conclusion can be drawn that TiO<sub>2</sub>, when present in the claimed catalyst, is catalytically active but, when present in Portland cement, is catalytically inactive.

2.3 From the above it follows that examples 3 and 6 of D13 disclose directly and unambiguously all components of the claimed catalyst composition in the specified amounts so that claim 1 of the main request lacks novelty.

2.4 In the oral proceedings the appellant sought to introduce an auxiliary request restricting claim 1 of the main request by the further feature "wherein the titanium is added as titanium oxide or titanium compounds decomposable to titanium oxide at the final calcination step (page 4, lines 27 to 28 of the description of the patent as granted).



- 2.4.1 The amended version "wherein the titanium is added as titanium oxide or ..." is directed to an alternative, wherein "titanium oxide" can be added in any form (page 4, lines 18 to 20; point 2.2) and wherein the catalyst may contain any other ingredient (see the word "containing" in claim 1). Thus, the first alternative of the proposed amendment provides no further distinction over the disclosure of D13, since in D13 titanium oxide is added together with other components of Portland cement to the catalyst as well. Thus, the novelty objection would not be remedied by said modification.
- 2.4.2 Furthermore, the amended version gives rise to fresh issues not yet addressed, because it might be questionable, whether the proposed claim amendment would meet the formal requirements under Article 123(2) and 84 EPC, since the disclosure in the patent in suit, from which the amendment is derived, refers furthermore to the addition of titanium "during a mixing and kneading step" (page 4, lines 26 to 28), which feature has been omitted from the proposed wording.
- 2.4.3 Consequently, the proposed amendment did not clearly overcome the objections made; considering its very late submission in the oral proceedings and a possible delay in the proceedings, the board exercised its discretion not to admit this modified main request into the proceedings (Case Law *supra*, VII.D.14.2).

*Amendments (auxiliary requests I, III and IV)*

3. All requests I, III and IV include the feature "(not originating from Portland cement)". This negative feature (disclaimer) is not disclosed in the application as filed and was incorporated to distinguish the claimed composition from examples 3 and 6 of D13.
  
- 3.1 According to the appellant's statements,  $TiO_2$  present in Portland cement was catalytically inactive (paragraphs 2.1 and 2.2.2). Consequently, the disclaimer introduced in claim 1 is intended to exclude at least one source of  $TiO_2$ , which is unsuitable for the intended purpose. That a particular source of  $TiO_2$  is not suitable for the purpose of the invention is, however, in clear contradiction to the application as originally filed which states that "the amount of titanium oxide added as another component is in the range of 0.005 to 0.95 wt.% as represented after calculation of all components into oxides in the same manner irrelevant of the adding method or form of titanium compound to be added" (page 8, lines 1 to 5) and that "(w)hen titanium is added during mixing and kneading of the the catalyst materials, titanium raw materials such as titanium oxide or titanium compounds decomposable to titanium oxide at the final calcination step may be used which should not contain components which act as a catalyst poison" (page 8, third paragraph). These requirements are met, when  $TiO_2$  is added in form of Portland cement (see points 2.2.1 and 2.2.2). Consequently, the originally disclosed addition of titanium oxide in any form expressly allows that titanium oxide can be added together with other oxides for example present in

Portland cement. Hence the introduction of the disclaimer contradicts the general statements in the original disclosure so that the amendment violates Article 123(2) EPC for this reason alone.

3.2 In respect of the allowability of disclaimers in general, the appellant argued that the disclaimer was allowable under the established case law by referring to T 1071/97, Case Law *supra*.

3.2.1 According to T 1071/97 the allowability of disclaimers was accepted under the terms of Article 123(2) EPC only under the following specific conditions:

(i) The subject-matter disclaimed must be precisely defined and strictly limited to the actual scope of the anticipation, and

(ii) the anticipation must be a so-called chance-anticipation which means that it would be regarded as accidentally falling within the terms of the claims of the patent in question (T 1071/97, cited in Case Law, *supra*). Whether the requirement (i) is met by the present disclaimer can be left unanswered, since the second requirement (ii) is not fulfilled.

3.2.2 The requirement (ii) refers to a situation where the prior art document has to form part of an entirely remote or unrelated state of the art, which the skilled person faced with the assessment of inventive step, would normally not take into consideration. This applies to cases, where there is no common or related technical field, or no common technical problem or

solution (see T 1071/97, *supra*, point 3.2).

Consequently, the document containing the disclosure should have no relevance for further examination of the claimed invention and must then disappear from the prior art field to be taken into consideration (T 863/96 of 2 April 1999, Case Law *supra*, point 3.2).

3.2.3 Exactly as the patent-in-suit, D13 is concerned with a dehydrogenation catalyst for dehydrogenation alkyl aromatic hydrocarbons such as ethylbenzene to styrene (see D13, abstract). Even if D13 is partly directed to hot water stability, appropriate catalytic activity and selectivity remain essential aims according to D13 (page 2, last paragraph). In fact, the catalysts of D13 should have an activity and selectivity in particular at lower steam/hydrocarbon-mol ratios of 0.6 to 8.8 equivalent to previous dehydrogenation catalysts (page 2, last paragraph). The catalysts of D13 contain the same essential oxide components as claimed (see point 2 above) and show high activity and selectivity (table 2). Furthermore, the catalysts are produced by the same preparation method (claim 1 and example 1 of D13).

3.2.4 From the above it follows that D13 relates to the same technical field as the patent in suit and to a partially identical problem and is thus highly relevant for the examination of inventive step. At least in his written submissions, the appellant himself considered D13 as the closest prior art document when discussing inventive step which approach is in line with that of the respondent. The board sees no reason to deviate from that approach. Consequently, the second

requirement (ii) established by the previous Case Law is not fulfilled.

- 3.3 Moreover, the amended features in the auxiliary requests apart from the disclaimer do not provide any further contribution to novelty and/or inventive step as can be gathered from the following:
- 3.3.1 In auxiliary request I, the additional term "added" refers to titanium oxide. However, also titanium oxide present in Portland cement is "added" to prepare the catalyst of examples 3 and 6 of D13 (see page 7, example 3).
- 3.3.2 In auxiliary request III, the process features of claim 1 "wherein the catalyst is obtainable by a method by which the catalyst components oxides and/or catalyst component oxide precursor compounds are subjected to wet mixing and kneading followed by extrusion molding, and are subsequently dried and calcined" are already disclosed in D13 (claim 1; examples 3 and 6 in connection with example 1; point 2. above).
- 3.3.3 In claim 1 of auxiliary request IV, the additional feature relating to the amount of chromium oxide refers to one alternative embodiment of claim 1 as promotor component. However, the other alternative embodiment of claim 1, which includes cerium oxide, molybdenum oxide and magnesium oxide as promotor component, remains unchanged. Thus, no additional difference is provided by claim 1 of auxiliary request IV over D13.

3.4 Consequently the only inventive step argument for auxiliary requests I, II and IV is based on the fact that  $TiO_2$  may not be present in form of Portland cement. However, this argument is based precisely on the feature defined in the disclaimer so that the disclaimer is used to establish an inventive step. Consequently, the disclaimer provides the appellant an unwarranted advantage which is not based on the original disclosure of his invention. Hence, the amendment in form of that disclaimer violates the requirements of Article 123(2) EPC in line with previous established case law (Case Law *supra*, III.A.1.6.3).

3.5 From the above it follows that the amendment of the claimed subject-matter contravenes Article 123(2) EPC, because the disclaimer contradicts the express teaching of the original disclosure of the application as filed. In addition, the disclaimer is not allowable under the previous established case law. Since the first mentioned reason will not be influenced by answers to the pending questions of law referred to the Enlarged Board of Appeal (Cases G 1/03 and G 2/03 resulting from referrals of T 507/99 dated 20 December 2002 and T 664/00 dated 28 November 2002; OJ EPO, 2003, 113 to 114), the board sees no reason to suspend the proceedings until the decision of the Enlarged Board of Appeal in these cases is issued.

*Version held allowable in the decision under appeal*

4. The opposition division held that the third auxiliary request underlying the decision under appeal met the requirements of the EPC. Since the proprietor is the

only appellant against that interlocutory decision and has requested to maintain the patent in that version, neither the board nor the non-appealing opponent (as a party to the proceedings as of right under Article 107, second sentence, EPC) has the power to challenge the maintenance of the patent as thus amended (G 9/92, OJ EPO, 1994, 875, first headnote).

## **Order**

**For these reasons it is decided that:**

The appeal is dismissed

The Registrar:

The Chairman:

C. Eickhoff

R. Teschemacher