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**Datasheet for the decision
of 17 July 2008**

Case Number: T 0345/03 - 3.3.07

Application Number: 91201947.8

Publication Number: 0469675

IPC: B01J 27/188

Language of the proceedings: EN

Title of invention:
Hydrosulphurization process

Patent Proprietors:
Akzo Nobel N.V.

Opponents:
Unilever Plc
Unilever N.V.

Headword:
-

Relevant legal provisions:
EPC R. 115(2)

Relevant legal provisions (EPC 1973):
EPC Art. 54

Keyword:
"Transfer of opposition (not allowable)"
"Novelty (no) - no purposive selection"

Decisions cited:
G 0004/88, G 0002/04, T 0279/89, T 0653/93, T 0702/97

Catchword:
-



Case Number: T 0345/03 - 3.3.07

DECISION
of the Technical Board of Appeal 3.3.07
of 17 July 2008

Appellants: Akzo Nobel N.V.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 January 2003
revoking European patent No. 0469675 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: S. Perryman
Members: B. ter Laan
F. Rousseau

Summary of Facts and Submissions

I. The appeal by the proprietors lies against the decision of the opposition division posted on 17 January 2003 to revoke European patent No. 0 469 675, based on European application No. 91 201 947.8.

II. The patent had been granted on the basis of six claims, of which the only independent claim read:

"1. A process for the catalytic hydrodesulphurization of a hydrocarbon-containing feed having a metals content of Ni plus V not exceeding 15 ppm and a boiling point range at which more than 50 volume per cent of the feed boils below 600°C, comprising contacting said feed under hydrodesulphurization conditions with a catalyst composition containing a porous, inorganic oxide carrier comprising transition alumina, a phosphorus component, a cobalt component, and a group VIB metal component, wherein the phosphorus component, calculated as P₂O₅, is 2-28 mmoles, the cobalt component, calculated as CoO, is 60-133 mmoles, and the group VIB metal component content, calculated as trioxide, is 132-208 mmoles, all calculated on the basis of 100 grams of said catalyst composition, and said catalyst composition is prepared by a process in which a chemical precursor of the transition alumina is shaped, the shaped material is subjected to at least one calcining step in order to form transition alumina, and the precursors of the phosphorus component and the metal components are deposited on the carrier material prior to, during and/or after the shaping step, with the proviso that the cobalt component precursor is deposited after forming of the transition alumina."

III. A notice of opposition against the patent was filed jointly by Unilever PLC and Unilever N.V. (hereinafter "the original opponents") on 27 January 1997, in which the revocation of the patent in its entirety was requested on the grounds of Article 100(a) EPC, for lack of an inventive step, and Article 100(b) EPC as well as Article 100(c) EPC.

The opposition was, *inter alia*, supported by

A2 US-A-4 276 201 and

A4 US-A-4 500 424.

At the end of the oral proceedings held on 27 November 2002, the opposition division revoked the patent. It was held that, referring to the relevant instances in the original description, the granted patent did not contain any subject-matter that extended beyond the application as originally filed. Also, there was sufficient disclosure for the invention as claimed in the main request to be carried out, but as it was unclear how the pore volume, pore diameter and pore size distribution should be measured, the introduction of parameters relating to those features in the claims of the auxiliary request (filed during the oral proceedings) caused a lack of clarity (Article 84 EPC) and could not be used to distinguish the subject-matter there claimed from the prior art. Also, neither the claimed subject-matter of the main request nor of the auxiliary request was novel over A4. In particular, A4 disclosed catalysts having ranges of molybdenum, cobalt and phosphorus that differed slightly from those claimed, but not sufficiently for the criteria for a

selection invention to be fulfilled according to decision T 279/89 of 3 July 1991. Therefore, both the main and the auxiliary request lacked novelty, the auxiliary request also being objectionable for lack of clarity.

According to the opposition file, a transfer of this opposition from the original opponents to a third party, Crosfield Ltd., a subsidiary of the original opponents in whose interest the opposition was supposedly filed, was requested on 14 May 1998. Crosfield Ltd. later changed its name to Ineos Silicas Limited (hereinafter "Ineos"). The request was initially not processed because of doubts whether the evidence satisfied the requirements regarding being a successor in business as set out in Decision G 0004/88 (OJ 1989, 480). Finally by a communication dated 22 February 2002, an EPO formalities officer confirmed that Ineos had been entered as opponent as from 5 February 2002. The opposition division did not decide on the matter but simply referred to this in the decision under appeal.

IV. On 18 March 2003, the proprietors (appellants) lodged an appeal against the above decision. The prescribed fee was paid on the same day. The statement setting out the grounds of appeal was filed on 19 May 2003.

By letter dated 21 November 2003, a representative for Ineos submitted arguments regarding the novelty of the patent in suit over A4.

By communication of 7 May 2008 the Board informed the proprietors and Ineos, as well as the representative of the original opponents, of their preliminary opinion

that it was not satisfied that Ineos was the correct respondent, as the status of opponent could not be freely transferred and Enlarged Board of Appeal decision G 0002/04 (OJ 2005, 549) indicated that a legal person who was a subsidiary of the opponent when the opposition was filed and who carried on the business to which the opposed patent related could not acquire the status of opponent if all its shares were assigned to another company. It was also indicated that a procedurally simple solution would exist if the original opponents authorized the patent attorney on record for Ineos to act for them. By letter dated 17 June 2008, the Ineos representative informed the Board of the original opponents' refusal to authorize him, announced his intended absence at the oral proceedings and requested that, in case Ineos was not the correct respondent, the arguments of their letter of 21 November 2003 be regarded as third party observations. No response was received on behalf of the original opponents.

V. Oral proceedings before the Board took place on 17 July 2008, in the absence of the original opponents, and of Ineos, as announced.

VI. The appellants' arguments can be summarized as follows:

- (a) The novelty objection had only been raised during the oral proceedings after Ineos, who was not the correct opponent, had drawn the opposition division's attention to A4, and was, in spite of protests by the patent proprietors, accepted into the proceedings. Therefore, that opposition ground should not have been admitted into the proceedings

and it should also not be a subject at the appeal stage.

- (b) The patent in suit concerned a multiple selection, a combination of a number of selections. Those should not be considered separately, but in combination. Not T 279/89 of 3 July 1991, which deals with a single selection, should be applied, but rather T 653/93 of 21 October 1996. A4 did not disclose the combination of a catalyst that satisfied the combination of all features, in particular the four features of the amount of phosphorus component, the amount of cobalt component, the amount of group VIB metal component and the preparation of the catalyst. A4 contained a more general disclosure than the combination of features now being claimed. A4 did not disclose the ranges of the metals in the present combination: whereas the range for the molybdenum compound fell within the range mentioned in A4, the range for the cobalt compound fell outside the preferred range of A4 and the range for the phosphorus compound only overlapped the preferred range of A4. Moreover, there was no hint of depositing the cobalt component on the catalyst support only after the formation of the transition alumina.

A further selection was the specific feedstock to be used, which should contain less than 15 ppm vanadium and nickel. A4 mentioned up to 100 ppm. A2 described the role of nickel and vanadium, which were poisons for the present catalysts. That specific feedstock was not disclosed in A4 either.

(c) The combined selection of features resulted in an advantageous effect: the catalysts according to the patent in suit had a higher relative volume activity (RVA) than the comparative catalysts and catalysts having ranges outside the claimed ones showed less performance, as demonstrated in numerous tests. Even if the ranges disclosed in A4 partially overlapped the present ones, nothing in A4 suggested that the present particular combination of features would lead to an improvement in activity. It was however admitted that the patent in suit did not concern a new property of the catalyst. The catalysts of A4 served the same purpose as the present ones. But since A4 aimed at improvement of the catalyst stability rather than its activity and achieved its aim by adaptation of the support, the combination of the present ranges for achieving a better activity was not disclosed. Therefore, the claimed subject-matter was a true selection invention. For those reasons, the claimed subject matter was novel.

VII. The appellants (patent proprietors) requested that the decision under appeal be set aside and the patent be maintained as granted.

The original opponents did not take any active part in the appeal proceedings and did not submit any requests.

Reasons for the Decision

1. The appeal is admissible.

Procedural matters

2. It is the *ex officio* obligation of the Board to be satisfied that the correct persons are parties to the proceedings. Here the Board is not satisfied that the purported transfer of the opposition to Ineos meets the legal requirements for such a transfer, so that Ineos cannot be regarded as a party. Rather the original opponents were accordingly summoned to the oral proceedings.
 - 2.1 This view of the Board is based on decision G 0002/04 (OJ 2005, 549) in which it is stated that the status as an opponent cannot be freely transferred, and that a legal person who was a subsidiary of the opponent when the opposition was filed and who carries on the business to which the opposed patent relates, cannot acquire the status as opponent if all its shares are assigned to another company.
 - 2.2 According to the letter on file of 29 October 1999 from a European Patent Attorney acting for the original opponents, the intended transferee of the opposition was at the time of filing of the opposition owned by the original opponents, and it was standard practice that oppositions involving this company's interests be filed in the name of the original opponents. This situation where the opposition is filed on behalf of a company which is a separate legal entity is exactly the situation in which the Enlarged Board of Appeal refuses

to allow an assignment of the opposition, as explained in decision G 2/04 (see in particular Reasons 2.2.1).

- 2.3 The status of the parties has to be considered in each case by the Board dealing with it. This Board is aware that on very similar facts, also involving the original opponents in this case and the same intended transferee, in its decision T 702/97 of 28 March 2001 Board of Appeal 3.3.5 decided in favour of allowing the transfer of the opposition. This decision was however issued before decision G 2/04 and can no longer be followed. Rather this Board follows the legal reasoning of decision G 2/04 and thus refuses to recognize the transfer of opponent status. Thus the original opponents remain as parties, and Ineos cannot be recognized as a party.
3. The original opponents took no active part in the appeal proceedings and never responded even to the communication by the Board pointing out the problems regarding a transfer of opposition. They were duly summoned to oral proceedings, and by Rule 115(2) EPC now applicable it was permissible for the oral proceedings to take place in their absence.

Novelty

4. The opposition ground of lack of novelty had been raised for the first time during the oral proceedings before the opposition division. The appellants stated that they had protested, but no such protest is mentioned in the minutes of the oral proceedings. Nor did the appellants in their statement of the grounds of appeal refer to any protest or request that that ground

not be admitted into the appeal proceedings. The appellants' protests against admitting novelty as a ground for opposition during the oral proceedings before the Board would rather appear to have been caused by the Board's communication dated 7 May 2008, in which the parties' attention was drawn to the possible consequences if the transfer of the opposition was not allowable.

As the opposition division was in any case entitled to raise and decide on the ground of lack of patentability due to lack of novelty, even though this specific ground was not raised on originally filing the opposition, and the opposition division did indeed decide to consider this ground and to revoke the patent on this ground, the Board considers it necessary and appropriate to consider and decide on this ground of lack of novelty on appeal.

5. A4 discloses a desulphurization process comprising contacting at least one hydrocarbon gas oil with a particulate catalyst in the presence of hydrogen under conditions including an elevated temperature from about 600°F to about 850°F and a pressure from about 500 to about 2500 psig, said catalyst comprising about 17 to about 25 weight percent of molybdenum components, calculated as MoO₃, about 1 to about 6 weight percent of cobalt components, calculated as CoO, and about 1 to about 6 weight percent of phosphorous components, calculated as P, on a porous refractory oxide support consisting essentially of gamma alumina, said catalyst has a narrow pore size distribution including at least about 75 percent and at least about 0.3 cc/gram of the total pore volume in pores of diameter from about 70 to

about 130 angstroms, less than about 0.05 cc/gram of the total pore volume in pores of diameter greater than 130 angstroms, a mode pore diameter from about 80 to about 110 angstroms, and at least about 40 percent of the total pore volume in pores of diameter between the mode pore diameter and less than about 25 angstroms above the mode pore diameter (claim 18). Further ranges are disclosed on page 8, lines 32 to 58.

The ranges of the present claims are given in mmoles, which can be recalculated in wt.% as follows:

P₂O₅: 2-28 mmoles is 0,3 to 4 wt.%

CoO: 60-133 mmoles is 4,5 to 10 wt.%

If the VIB metal compound is MoO₃ (claim 4 and examples):
132-208 mmoles is 19 to 30 wt.%

The following tables give an overview of the disclosure of A4 and the claimed subject-matter of the patent in suit.

A4	MoO ₃	CoO	P ₂ O ₅
claim 18	17-25	1-6	2, 3-13, 8
column 8, 1. 32-40	≥3 17-35	0,5-10 1-6	1, 15-23 2, 3-13, 8
column 8, 1. 52-58	17-25	1-4	2, 3-9, 2
example 1	20,5	3,3	6,4
table IV	20,0	5	6,9

Patent in suit	MoO ₃	CoO	P ₂ O ₅
claim 1	19-30	4,5-10	0,3-4
claim 5	19-23	4,5-6	0,3-4
examples	20,5-24,6	5,0-5,1	0,47-3,0
comp.ex.10	20,7	5,1	4,7

From the above it can be seen that in present claim 1 the range for MoO₃ (19-30) overlaps with most of the range of claim 18 of A4 (17-25).

The range claimed for CoO (4,5-10) overlaps with an important part of the range of claim 18 of A4 (1-6). Although the limits of the ranges appear to point to a preference for lower values in A4 whereas the patent in suit claims higher values within the disclosed range, in fact the amount of CoO used in the examples is about the same: 5,0 to 5,1 (patent in suit, examples 1 to 5) compared with 3,3 (A4, example 1) and 5 (A4, table IV).

The range claimed for P₂O₅ (0,3-4) overlaps with that of claim 18 of A4 (2,3-13,8). Of the three ranges, only that for P₂O₅ might be considered narrow compared with the range disclosed in A4. In that respect, it is noted that A4 shows a preference for lower values, the example being as low as 6,4 (Example 1) or 6,9 (Table IV).

5.1 The question is, whether a new invention can be recognized for the overlapping parts of the ranges. An indication for the presence of a new invention could be a new property that had not been mentioned in the prior

art document concerned. However, that is not the case here. Stability, activity and a high conversion are the main properties that any skilled catalyst person considers as the prerequisites for producing a useful catalyst and all are mentioned in A4 (column 3, lines 24 to 30).

5.1.1 In this respect it is noted that although examples 1 to 5, in which the amounts of metal fall within the claimed ranges, show a higher RVA than comparative examples 6 to 11, those values are only given for about 21 weight% MoO₃ (except for 24,6 in example 5), 5 weight% CoO and an amount of P₂O₅ varying from 0,47 to 3,0 weight%. Thus, examples 1 to 4 show the effect of the amount of P₂O₅ for certain values of MoO₃ and CoO rather than an effect of the combined selection of ranges as claimed. Those values of MoO₃ and CoO fall both within the claimed ranges as well as within the ranges of A4, claim 18, and have been disclosed in the example of A4. Furthermore, comparative example 10, with MoO₃ (20,7) and CoO (5,1) falling within the claimed ranges but P₂O₅ (4,7) falling just outside, has the highest RVA of all comparative examples, which points at a gradual improvement when for the given amounts of MoO₃ and CoO the amount of P₂O₅ is reduced, rather than a sudden, unexpected effect due to the specific selection of a lower value for P₂O₅. Therefore, it is concluded that the examples show the effect of reducing the amount of P₂O₅ for about 21 weight% MoO₃ and about 5 weight% CoO rather than the presence of a new catalyst property resulting from the combined selection of ranges now being claimed.

During the oral proceedings the appellants confirmed that the patent in suit did not involve a new catalyst property but rather the improvement of the activity, whereas A4 concerned the stability. Therefore, novelty on the basis of a new catalyst property due to the combined selection of narrow ranges within broader known ranges cannot be acknowledged.

5.1.2 In decision T 0653/93 (*supra*), cited by the appellants, the major reason for accepting the claimed combination of ranges as a selection invention was that the result to be achieved, in the form of a product, was indicated in the claims and hence was a requirement of the invention, which product moreover had not been produced with the prior art process. The ability to arrive at the new product can be considered as a new property. However, in the present case, neither do the claims contain any result to be achieved nor is an enhanced activity a new catalyst property (see point 5.1.1 above). The only requirements in the claims, apart from the metal ranges, are the order of the steps to prepare the catalyst and the purity of the feedstock to be converted.

5.1.3 The purity of the feedstock is not a property of the catalyst itself. As nickel and vanadium are known contaminants of the feedstock (see e.g. A2, column 1, lines 24 to 32, example 1) and can, according to the appellants, be considered as catalyst poisons, the feedstock purity requirement can only be seen as a requirement that the catalyst should be suitable for the hydrodesulphurization of a hydrocarbon-containing feed having a metals content of Ni plus V not exceeding 15 ppm and a boiling point range at which more than 50

volume per cent of the feed boils below 600°C. The feedstock according to A4 (column 4, lines 36 to 52) will for the most part boil at less than 1050°F (565°C) and contain not more than 100 ppmw, preferably less than 5 ppmw metal contaminants. Therefore, not only is the catalyst suitable for the hydroconversion of feedstock containing a higher amount of contaminant metals and is therefore certainly capable of dealing with less contaminated oil, but also the preferred limit lies within the range now being claimed. For that reason, the requirement in the claim concerning the purity of the feedstock cannot confer novelty on the process either.

- 5.2 The present catalyst composition is prepared by shaping a chemical precursor of the transition alumina, subjecting the shaped material to at least one calcining step in order to form transition alumina, and depositing the precursors of the phosphorus component and the metal components on the carrier material prior to, during and/or after the shaping step, with the proviso that the cobalt component precursor is deposited after the forming of the transition alumina. In A4, column 5, lines 54 to 58, the impregnation of calcined support particles with the metals and phosphorus compounds is described. In column 3, lines 59 to 61, the usual preparation of the support particles in the form of shaped particles is mentioned. Therefore, the metal precursors, including the cobalt, are deposited after the shaping of the support, so that that feature, too, cannot form a basis for novelty. The appellants pointed to the disclosure in A4 column 8, lines 10 to 28) of an alternative method in which the precursors of both support and catalyst materials are

admixed and then shaped, but that method is only used if further calcination steps are to be avoided. It cannot be considered as a selection to apply the method indicated in A4 as the usual one.

5.3 In view of the above, there can be no doubt that the skilled person seeking a process for the catalytic hydrodesulphurization of a hydrocarbon-containing feed having a metals content of Ni plus V not exceeding 15 ppm and a boiling point range at which more than 50 volume per cent of the feed boils below 600°C would have been led by the disclosure of A4 to contemplate using a process that is within the subject matter of present claim 1.

6. For those reasons, the claimed subject-matter is not novel.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

C. Eickhoff

S. Perryman