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D E C I S I O N
of 19 September 2000

Case Number: T 0176/98 - 3.3.3

Application Number: 90100145.3

Publication Number: 0378104

IPC: C08C 19/02

Language of the proceedings: EN

Title of invention:
Polymer hydrogenation catalysts

Patentee:
THE DOW CHEMICAL COMPANY

Opponent:
BASF Aktiengesellschaft, Ludwigshafen

Headword:
-

Relevant legal provisions:
EPC Art. 54(2), 56, 114(2)

Keyword:
"Novelty - public prior use (no) - insufficient evidence"

Decisions cited:
T 0194/86; T 0093/89; T 0328/87; T 0534/89; T 0211/90;
T 0017/91; T 0472/92; T 1002/92; T 0039/93; T 0097/94

Catchword:
-



Case Number: T 0176/98 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 19 September 2000

Appellant:
(Opponent)

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Respondent:
(Proprietor of the patent)

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office dated 12 November 1997 and
issued in writing on 2 December 1997 rejecting
the opposition filed against European patent
No. 0 378 104 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: C. Gérardin
Members: R. Young
V. Di Cerbo

Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 378 104, in respect of European patent application No. 90 100 145.3, filed on 4 January 1990 and claiming a US priority of 9 January 1989 (US 294452) was published on 7 September 1994 (Bulletin 94/36). Claim 1 read as follows:

"A catalyst comprising at least one Group VIII metal deposited on a porous support material, characterized in that said carrier has a pore size distribution such that at least 95 percent of the pore volume is defined by pores having diameters greater 45 nm (450 Å) and the ratio of metal surface area to carrier surface area is in the range of from 0.07 to 0.75:1."

Claims 2 to 5 were dependent claims directed to elaborations of the catalyst according to Claim 1.

Claim 6, an independent claim, was worded as follows:

"A process for the hydrogenation of unsaturated polymeric materials comprising contacting at least one unsaturated polymeric material having at least one carbon-carbon double bond with hydrogen in the presence of a catalyst comprising at least one Group VIII metal impregnated on a pore support, said support having a pore size distribution such that at least 95 percent of the pore volume is made up of pores having diameters greater than 45 nm (450 Å), and the ratio of the metal surface area of said catalyst to the carrier surface area is in the range of from 0.07 to 0.75:1."

Claims 7 to 10 are dependent claims directed to elaborations of the process according to Claim 6.

II. A Notice of Opposition was filed on 6 June 1995, on the grounds of lack of novelty and lack of inventive step. The opposition was supported by the following documents:

- D1: US-A-4 424 162;
- D2: US-A-4 038 175;
- D3: prospectus for BASF catalyst from 1984;
- D4: English prospectus for BASF catalysts from 1984;
- D5: Technical data sheet (German) for catalyst H 0-12 from 1979;
- D6: Technical data sheet (English) for catalyst H 0-12 from 1981; and
- D7: Analysis sheet for delivery of catalyst H 0-12 from 1987;

as well as the later filed, but admitted

- D8: Investigation report dated 26 October 1994; and
- D9: Sworn declaration of Dr Geierhaas of 28 October 1996;

In particular, two instances of prior public use of a catalyst designated H 0-12 produced by the Opponent were alleged, as follows. According to the declaration D9:

- (i) A specific quantity of the catalyst H 0-12 had been delivered to BASF Japan, Ltd., Tokyo, on 15 November 1988. The total consignment consisted of a mixture of four samples, of which the relevant H 0-12 sample made up 33% by weight. The consignment had been delivered with no obligation of confidentiality.
- (ii) Specific quantities of the catalyst H 0-12 had been delivered to Chemische Werke Hüls AG (now Hüls AG) in February 1987 and in August 1987, also

without obligation of confidentiality. No modifications in the carrier material or the metal coating had been undertaken in the samples delivered, compared with other, specified samples of H 0-12, the relevant parameters of which had been measured and reported (D8).

III. By a decision dated 12 November 1997 and issued in writing on 2 December 1997, the Opposition Division rejected the opposition.

According to the decision, whilst the opposition was admissible, the requirements of Rule 55(c) EPC in particular being fulfilled, since the Notice of Opposition indicated the facts which made it possible to determine the date of public prior use, what had allegedly been used, and the circumstances relating to the alleged use, the subject-matter of the patent in suit was novel and based on an inventive step, for the following reasons:

- (a) As regards the alleged prior use (i), the delivery to BASF Japan Ltd represented an internal sale and could not be considered as state of the art made available to the public by use within the meaning of Article 54(2) EPC.
- (b) As to the alleged prior use (ii), whilst, according to D9, the carrier material and metal coating of the samples of H 0-12 catalyst delivered to Chemische Werke Hüls in February 1987 and August 1987 had been of the same **kind** as those of which the relevant parameters had been investigated and reported in D8, nevertheless the catalysts actually delivered had admittedly not been tested and consequently there was no evidence that they exactly corresponded to the samples

whose parameters had been measured. The fact that the catalyst was of the same kind did not mean that it necessarily possessed the same characteristics of pore size distribution and surface area. On the contrary, it was evident from D7, that different samples of H 0-12 catalyst were considerably different in surface areas (BET). Hence there was not sufficient evidence to establish prior use due to the delivery to Hüls of a H 0-12 catalyst.

- (c) The subject-matter of the patent in suit was also based on an inventive step since neither of the cited documents D1 and D2 related to the problem addressed by the patent in suit.

IV. On 11 February 1998, a Notice of Appeal against the above decision was filed, the prescribed fee being paid on the same day.

The Statement of Grounds of Appeal, which was filed on 14 April 1998, was accompanied *inter alia* by:

D10: an experimental report dated 9 January 1998, containing technical data concerning the specific surface area and pore volume of the samples allegedly delivered to Hüls AG,

which was referred to for the first time.

The Appellant (Opponent) argued substantially as follows:

- (a) As to prior use (i), BASF Japan Ltd. was an independent legal entity and thus a third party or member of the public with respect to BASF AG

Ludwisagshafen. Consequently, the delivery amounted to a public prior use of the catalyst claimed in the patent in suit.

- (b) Regarding prior use (ii), samples of the consignments of the catalyst H 0-12 delivered in February 1987 and August 1987, respectively, to Chemische Werke Hüls had been retained, analysed as reported in D10, and found to correspond to the catalysts claimed in the patent in suit.
- (c) Thus, the catalyst in claimed in claims 1 to 5 of the patent in suit was not new.
- (d) The process of hydrogenation defined in Claims 6 to 10 did not involve an inventive step since the use of catalyst H 0-12 for selective hydrogenation was known from D3 and D4.

V. Following a request in a submission dated 26 August 1998 by the Respondent (Patentee) to be provided with the experimental data underlying the report D10, the Appellant filed, on 18 December 1998, copies of the missing experimental data.

VI. With a submission dated 26 April 1999, the Respondent argued, in substance, as follows:

- (a) The opposition had been inadmissible from the start since the facts and stated evidence in the initial Notice of Opposition were insufficient to determine the date of prior use, what had been used, and the circumstances of use as defined in decision T 328/87 (OJ EPO 1992, 701).
- (b) The new facts and evidence submitted with the Statement of Grounds of Appeal (D10 and the further related experimental data) had been late-

filed in the sense of Article 114(2) EPC. In particular, the samples of catalyst H 0-12 analysed according to the test report of 9 January 1998, had been available to the Appellant according to their own submissions since 1987. Moreover, only a part of the relevant experimental data had been filed, following a request of the Appellant, with the letter received on 18 December 1998, i.e. eight months after the filing of the Statement of Grounds of Appeal. Even then, part of the relevant experimental data was still missing. This was contrary to the principles of good faith and, in accordance with the relevant case law of the boards of appeal, these new facts should not be admitted to the appeal proceedings. Decisions T 17/91 of 26 August 1992, T 211/90 of 1 July 1993 (neither published in OJ EPO) and T 534/89 (OJ EPO 1994, 464) were relied upon in this connection.

(c) With regard to the alleged prior use by BASF Japan Ltd., the following specific objections were raised:

- (i) BASF Japan Ltd. was a wholly owned subsidiary of BASF AG and was thus not an independent member of the public. Consequently the delivery of a catalyst to such a subsidiary was not an act of prior use.
- (ii) The alleged delivery date of 15 November 1988 was less than two months prior to the priority date of the patent in suit and there was no evidence of the date of receipt of the samples allegedly delivered.

- (iii) Because the alleged delivery consisted of a mixture of four samples, the test reports showing the properties of the relevant sample of catalyst H 0-12 were insufficient to determine the composition of the catalyst.
- (d) In relation to the alleged prior use by Hüls, the following objections were raised:
- (i) It was evident from the test report of 9 January 1998 that the analysed properties of both catalyst samples differed considerably from each other even though both samples were from the same year, and furthermore from other samples reported during the opposition proceedings.
 - (ii) There were also discrepancies in the experimental data supplementing the test report of 9 January 1998 (D10). Consequently there were doubts with respect to the reliability of the data submitted by the Appellant.
 - (iii) Finally, the Appellant had still not provided the requested cumulative intrusion against diameter graph which was important to determine the ratio of pores having a diameter of more than 45 nm. Consequently the data of the test report could not be verified with respect to this sample.
- (e) It was re-iterated that the Respondent was not in a position to verify any of the statements made by the Appellant. Since the Board of Appeal as well as the Respondent had to rely on the information submitted by the Appellant, the latter should be

required to prove his case up to the hilt according to decision T 472/92 (OJ EPO 1998, 161). In the present case, furthermore the experimental data submitted by the Appellant showed considerable differences so that even under a less strict standard of proof, it could not be acknowledged that the catalyst samples fell under Claim 1 according to the patent in suit.

VII. Oral proceedings were held before the Board on 19 September 2000. At the oral proceedings, the Board indicated the standard of proof expected in cases where the alleged prior use related to activities of the party making the allegation, and referred in particular to the decision T 97/94 (OJ EPO 1998, 467), which dealt with such a situation and was concerned with establishing an unbroken chain of evidence relating to such an alleged prior use. After the parties' submissions on the basis of the written evidence in the proceedings to date had been heard, and after intermediate deliberation of the Board, the parties were informed that the alleged prior use had not been proved "up to the hilt". Hence, the subsequently submitted documents D10 et seq., which were irrelevant, were disregarded under Article 114(2) EPC.

VIII. The Appellant requested that the decision under appeal be set aside, and the patent in suit revoked in its entirety.

The Respondent requested as main request that the appeal be dismissed or, in the alternative that the patent be maintained in amended form in accordance with the auxiliary request submitted during the oral proceedings before the Opposition Division held on 12 November 1997.

Reasons for the Decision

1. *Admissibility of the appeal*

The only issue raised which would have relevance to the admissibility of the appeal, is the objection of the Respondent that the substantiation of the alleged prior use in the original Notice of Opposition had been deficient, so that the opposition should be retrospectively declared inadmissible. Regardless of the extent to which the alleged prior use had been substantiated at the date of filing of the Notice of Opposition, however, the opposition was not based solely on an allegation of prior use, but also on an allegation of lack of novelty and/or inventive step in the light of the disclosures of D1 and D2. No deficiency as to the admissibility of the opposition in respect of these latter aspects has been alleged, let alone demonstrated. The fact that the Appellant no longer pursued the objections on the basis of D1 and D2 in the appeal is of no consequence for the admissibility of the opposition, since this is determined by the state of the file at the end of the nine month opposition period. Consequently, the opposition was admissible. It follows that there is no valid objection to the admissibility of the appeal. The latter is consequently held to be admissible.

2. *The patent in suit*

The patent in suit relates to a catalyst comprising at least one group VIII metal (preferably palladium) deposited on a porous support material, the support material having a pore size distribution such that at least 95% of the pore volume is defined by pores having diameters greater than 45 nm and the ratio of metal surface area to support material surface area is in the

range of from 0.07 to 0.75:1 (Claim 1). According to Claim 6, such a catalyst may be used in a process for the hydrogenation of unsaturated polymeric materials.

The crucial issue to be determined in the appeal is whether the allegations of prior use, in particular the alleged uses (i) and (ii) of the catalyst according to Claim 1 of the patent in suit (section IV(a)(b), above), have been established with the requisite degree of certainty, and hence whether the Appellant's objections of lack of novelty and lack of inventive step in the claimed subject-matter can be upheld.

3. *Novelty*

It is the established case law of the boards of appeal that prior public use is adequately substantiated only if sufficiently specific details are given of what was made available to the public where, when, how and by whom (T 93/89, OJ EPO 1992, 718; Reasons for the Decision, point 8.1, referring *inter alia* to T 194/86 of 17 May 1988, itself not published in OJ EPO). Furthermore, concerning the standard of proof that needs to be applied in those prior public use cases where practically all the evidence in support of an alleged prior public use lies within the power and knowledge of the Opponent, the latter has to prove his case up to the hilt (T 472/92, *supra*; Headnote I in conjunction with Reasons for the Decision, point 3.1).

Both these elements have been brought together in the decision T 97/94 (*supra*). According to the latter, which concerned the alleged prior use, by two specified firms, of a particular zeolite functioning as a dehydrating agent in the preparation of polyurethanes, the zeolite being a product originating from one of the Opponents in that case, the considerations arising from the case law referred to above led the Board, in order

to establish that there was an unbroken chain of evidence relating to the nature of these zeolites up to and including the preparation of the polyurethanes, to concentrate on the following points:

- composition of the zeolite manufactured by the relevant Opponent
- correspondence between the manufactured product and the marketed product
- correspondence between the marketed product and the product used (Reasons for the Decision, point 5.2).

The Board in that case concluded, furthermore, that although the despatch of stocks of a named, commercialised product had been documented in an adequate manner, there was no trace of the arrival of the merchandise which would permit the conclusion that the products identified by the relevant Opponent had in fact been received by the two firms concerned, and that this was a major gap in the case of the Opponent which could not be filled by the affidavits received from senior employees of these two firms (Reasons for the Decision, points 7.3.1 and 7.3.2 of original text, not translated in OJ EPO). It followed that the allegation of public prior use in that case was without foundation (Reasons for the Decision, point 9).

3.1 The present case is considered to have a number of features in common with the situation adjudicated in T 97/94 (*supra*) in particular,

- (i) The catalyst H 0-12 is alleged to have been prior used in a product originating from the Appellant (Opponent).
- (ii) The prior use is alleged to have been carried into effect by two named firms to which deliveries of specified samples of the catalyst are alleged to have been made.
- (iii) Evidence for the delivery has been provided in the form of an affidavit.

Thus all the evidence lies within the power of the Appellant and, consistently with the principles laid down in T 97/94, an unbroken chain of evidence relating to the alleged prior use should be established with a degree of certainty which is beyond all reasonable doubt.

3.2 In the present case, the uses of the catalyst H 0-12 are alleged to be BASF Japan, Ltd, Tokyo (alleged prior use (i)) and Hüls AG (alleged prior use (ii)). The only evidence for the use of these products by the above two firms is, however, the statement in the penultimate paragraph of the affidavit D9 that a consignment containing a sample H 0-12 was delivered without obligation of confidentiality to BASF Japan Ltd (alleged prior use (i)), and the statement in the final paragraph of the same affidavit that a sample of the catalyst H 0-12 had been delivered to Hüls AG in February 1987 and in August 1987 also without obligation of confidentiality, in conjunction with the reference to specified samples of H 0-12 in D7, which is an internal memo of BASF AG (alleged prior use (ii)).

3.2.1 Quite apart from the suitability of such an affidavit as a means of evidence for establishing a date of delivery (in this case almost 10 years after the relevant events), which was criticised by the Respondent at the oral proceedings before the Board, and the questions of whether BASF Japan, Ltd was in fact a member of the public in the sense of Article 54(2) EPC, and if so whether the consignment consisting of a mixture of four samples was actually analysable, which were also contested by the Respondent (section VI(c)(i)(iii)), the Board is struck by the conspicuous absence of any evidence concerning the receipt by the relevant two firms of the consignments referred to. Nor has any witness been offered by the Appellant at any stage of the proceedings, who would be able to testify on behalf of BASF, Japan or Hüls AG. These two firms are however, the principals alleged to have been responsible for the novelty-destroying use of catalyst H 0-12. Consequently, the absence of such evidence is a serious gap in the chain of evidence leading from the production and despatch, according to D9, of samples of the catalyst and the public prior use of such catalyst by the two firms mentioned.

3.2.2 This gap in the chain of evidence is accentuated, in relation to alleged prior use (i), by the fact that the date of despatch of the consignment to BASF Japan, Ltd is stated in D9 to be 15 November 1988, that is less than two months before the priority date before the patent in suit (section VI(c)(ii)). In view of the further statement that 2 750 kg of the catalyst were despatched it must be assumed that transport was by ship. Consequently it is not beyond the bounds of possibility, that, with the delays inevitable in sea transport, the consignment may not have reached Tokyo

before the relevant priority date. In the absence of any evidence on this point, it cannot be assumed that any public use of the consignment in Tokyo corresponded to a prior such use.

3.2.3 Whilst the date of despatch in the case of alleged prior use (ii) is sufficiently early to permit of little doubt as to the date of its presumed arrival, the complete absence of evidence on this point means that it is not possible to establish what was received by Hüls AG, let alone how it was used.

3.2.4 The mere statement, in D9, that delivery in each case was without obligation of confidentiality can only be interpreted, in the Board's view, as meaning there was no obligation of confidentiality with respect to the firm despatching the goods. In particular it does not exclude the existence of an obligation, on the part of the firms in receipt of the consignments, to some third party not referred to in the proceedings.

3.2.5 In summary, the necessary unbroken chain of evidence relating to the alleged prior use of the catalyst H 0-12 has not been established. Consequently, and to this extent, the novelty requirement is satisfied as regards the subject-matter of all the claims of the patent in suit.

4. *Late-filed evidence*

In view of the finding, announced after intermediate deliberation of the Board during the oral proceedings, that the alleged prior use had not been demonstrated "up to the hilt" (section VII, above), on the basis of the documents already forming part of the proceedings, the question arose as to the admissibility of the experimental report D10 and related further experimental data filed during the appeal. Since,

however, the Appellant at the oral proceedings explicitly confirmed that the content of this evidence had no bearing on the alleged receipt, by the two relevant firms, of the consignments referred to in D9, the relevance of this evidence to the outcome of the proceedings was admittedly negligible. Thus, following the principles laid down in T 39/93, (OJ EPO 1997, 134), referring to T 1002/92 (OJ EPO 1995, 605), this late-filed evidence was disregarded pursuant to Article 114(2) EPC.

5. *Inventive step*

With the finding that the alleged public prior use had not been established, the Appellant offered no further arguments in support of his objection of lack of inventive step. Since, furthermore, the sole basis for the allegation of such lack of inventive step in the written submissions had been on the basis that the catalyst H 0-12 itself formed part of the state of the art (section IV(d), above), the latter assumption having lost its validity through the relevant finding of the Board (section 3 etc.,) there is clearly no remaining basis for the original objection of lack of inventive step. On the contrary, the subject-matter claimed in the patent in suit is, in view of the above, not only new, but also involves an inventive step within the meaning of Article 56 EPC.

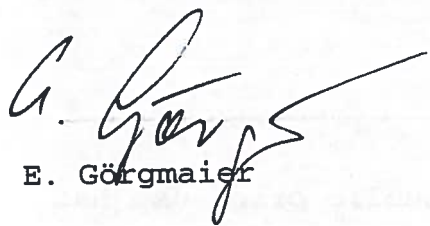
6. It follows from the above finding, that the main request is allowable. It is not, therefore, necessary for the Board further to consider the set of claims forming the auxiliary request.

Order

For these reasons it is decided that:

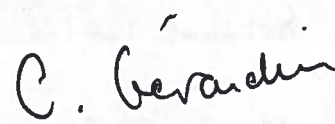
The appeal is dismissed.

The Registrar:



E. Görgmaier

The Chairman:



C. Gérardin