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Boards of Appeal

Chambres de recours

Case Number : T 958/90 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal 3.3.1
of 4 December 1992

Appellant :
(Proprietor of the patent)

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Respondent :
(Opponent)

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Decision under appeal :

Decision of the Opposition Division of the
European Patent Office dated 17 October 1990
revoking European patent No. 0 180 673 pursuant
to Article 102(1) EPC

Composition of the Board :

Chairman : K. Jahn
Members : R. Spangenberg
G. Davies

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File Number: T 958/90 - 3.3.1

Application No.: 84 307 772.8

Publication No.: 0 180 673

Title of invention: Mixtures containing nitrilotriacetic acid and
iminodiacetic acid (or salts thereof) as a sequestering
agent

Classification: C11D 3/33

D E C I S I O N
of 4 December 1992

Applicant: The Dow Chemical Company

Proprietor of the patent:

Opponent: BASF Aktiengesellschaft, Ludwigshafen

Headword: Sequestering agent/DOW

EPC Articles 54(1), 123(2), 123(3), Rule 58(2)

Keyword: .Change of category, new use (no)

Catchwords

- 1) The question of the admissibility of a change of category from a composition claim to a method of preparing the composition is left open (not decisive; point 4 of the reasons).
- 2) The use of a known physical entity for a know purpose does not represent a new technical teaching in the sense addressed in G 2/88 and G 6/88, if a hitherto unknown increase in activity occurs (point 6 of the reasons).

Summary of Facts and Submissions

I. This appeal, which was filed on 14 December 1990 and for which the appropriate fee was paid on the same date, lies from the decision of the Opposition Division of the EPO dated 17 October 1990 revoking European patent No. 0 180 673. This patent was granted in response to European patent application No. 84 307 772.8 filed on 9 November 1984. The patent specification contained 7 claims, Claim 1 relating to a sequestering agent.

II. The decision under appeal was based on amended Claims 1 to 15, Claim 1 relating to the use as a sequestering agent of a mixture comprising from 98 to 80% by weight nitrilotriacetic acid or a water-soluble salt thereof and from 2 percent to 20 percent by weight iminodiacetic acid or a water-soluble salt thereof.

Claims 5 to 8 related to the use of the same mixture of iminodiacetic acid and nitrilotriacetic acid as detergent builders and Claims 12 to 15 related to a method of preparing a sequestering agent.

In the decision under appeal the following documents were cited:

(1) US-A-3607930

(2) US-A-3415878

The stated ground for revocation was that the subject-matter of Claims 1 to 4 lacked novelty in respect of document (2). In particular, the Opposition Division considered that, although documents (1) and (2) aimed at process improvements to increase the yield of nitrilotriacetic acid (NTA) and to decrease the content of

iminodiacetic acid (IDA) and other by-products in a process for the production of alkali metal salts of NTA, the obtained NTA contained amounts of IDA which fell within the range specified in Claim 1 and was, according to document (2), intended for use as a sequestering agent. Thus, the Patentee had only established a new fact, namely the improved sequestering properties conferred to NTA by the presence of a minor quantity of IDA relating to a known use and this finding did not render the subject matter of the claims novel.

In addition, Claims 5 to 8 and 12 to 15 were held unallowable pursuant to Art. 123(3) EPC.

III. A statement of grounds of appeal was received on 13 February 1991. Oral proceedings took place on 4 December 1992. At the beginning of the oral proceedings the Appellant submitted four amended sets of claims, headed main request, first, second and third auxiliary requests. Amended Claim 1 of the main and second auxiliary requests read as follows:

The use of iminodiacetic acid or a water soluble salt thereof (IDA) in a weight ratio of 2:98 to 20:80 to increase the ability of nitrilotriacetic acid or a water soluble salt thereof (NTA) to sequester calcium and magnesium ions from aqueous solutions.

Claim 1 of the first and third auxiliary requests, which corresponded to Claim 2 of the main and first auxiliary request, contained the more limited weight ratios of from 2,5:97,5 to 10:90. The main and first auxiliary request further contained claims to the use as a detergent builder of IDA/NTA-mixtures having the above weight ratios and claims to a method of preparing a sequestering agent which comprised mixing IDA and NTA to provide the above weight ratios.

IV. In his written submissions and during oral proceedings the Appellant (the patent proprietor) argued that the decision under appeal was based on an incorrect understanding of the claimed subject-matter. He referred to Decisions G 2/88 and G 6/88 of the Enlarged Board of Appeal (OJ EPO 1990, 93 and 114) and T 231/85 (OJ EPO 1989, 74) and submitted that the relevant technical teaching of the disputed patent was not simply the use of a specified IDA/NTA-mixture, but required a conscious choice of IDA for the purpose of increasing the sequestering ability of NTA. This was made clear by the amended wording of Claims 1 to 4. In contrast to that, the IDA in the mixtures obtained according to documents (1) and (2) was not present as a matter of choice, but as an unavoidable impurity. The technical teaching of these documents was to use NTA in the highest possible purity. Therefore, a person skilled in the art would not have construed the sentence in document (1), according to which the products of the process described therein were suitable for "industrial purposes" without further purification, as relating to the use as a sequestering or detergent builder, although this use was a very important industrial application of NTA. Thus, the subject-matter of the disputed patent was novel. Moreover, since the purposive selection of certain amounts of IDA had a surprising effect which constituted a significant advance in the art, it was also inventive.

In respect of Art. 123(3) EPC, he submitted, in reply to observations made by the Board in respect of Decision T 402/89, in which decision doubts were expressed whether the change of category from a composition claim to a claim to a method of preparing this composition was admissible, that in his opinion any infringement of the method claims would have also infringed Claims 1 to 4 as granted, and therefore the reasoning of the decision G 2/88 of the Enlarged Board of Appeal should also apply to this type of change of category.

V. The Respondent submitted that, albeit one could have doubts about the admissibility of the present claims to a method of preparing a NTA/IDA-mixture in respect of Art. 123(2) and (3) EPC, the main issue in this appeal was not the formal admissibility of the amended claims but their lack of patentability for substantive reasons. The amended Claim 1 as submitted during oral proceedings differed from that underlying the decision under appeal by its wording, but related to the same technical teaching. This technical teaching, however, lacked novelty in view of documents (1) and (2), which already taught the use of the products of the processes described therein, i.e. IDA/NTA-mixtures of the claimed weight ratios, as sequestering agents. Since it was common general knowledge before the filing date of the disputed patent that NTA was predominantly used in detergent compositions as a sequestering agent and, at the same time, organic builder, a person skilled in the art would understand, so he argued, that nothing else than the use as a sequestering agent or detergent builder could be meant by the expression "industrial purposes" used in document (1). In order to demonstrate the relevant common general knowledge, he submitted

(3) Ullmanns Encyklopädie der Technischen Chemie, Vol. 17 (1979), pages 339 to 341 and

(4) Ullmanns Encyklopädie der Technischen Chemie, Vol. 24 (1983), pages 91 to 95.

VI. The Appellant requested that the decision under appeal be set aside and the patent be maintained on the basis of the set of claims submitted as the main request, or, alternatively, on the basis of the claims submitted as auxiliary requests 1 to 3, in that order.

The Respondent requests that the appeal be dismissed.

At the end of the oral proceedings the decision of the Board to dismiss the appeal was announced.

Reasons for the Decision

1. The appeal is admissible.
2. Amended Claims 1 to 4 find their basis in Claims 1 to 4 as filed and granted in combination with the first paragraph of the description as filed, page 4, lines 1 to 10 (see the patent specification, page 2, lines 49 to 53). The use of the respective compositions as detergent builders is disclosed on page 4, line 25 of the description as filed (see the patent specification, page 2, lines 61 and 62). Therefore, no objections under Art. 123(2) arise from the amendments to these claims.
3. According to the Appellant, the method claims have an implicit basis in the chapter "performance testing" on page 5, lines 23 to 24 of the description as filed (see the patent specification, page 3, line 13), where it is stated that standard solutions of chelant (IDA, NTA or mixtures thereof) were prepared for titration, in combination with the mole % compositions indicated in Table I. The Board has doubts whether the above statement can be taken out of its context, however, since no request was submitted to consider these claims separately, and since the appeal must fail for another reason, the Board need not decide this question.

4. The present use and method claims have no direct counterpart in the claims as granted, which related to a sequestering agent and a method of sequestering or complexing metal ions. The category of the claims was changed because Claims 1 to 4 as granted related to compositions which were not novel. Therefore, the amendments to the claims can be regarded as "necessary" within the meaning of Rule 58(2) EPC. Regarding the use claims, the Board is satisfied, having regard to Decision G 2/88 of the Enlarged Board of Appeal, that the requirement of Art. 123(3) EPC is also met. In respect of the new claims to the method of preparing the composition which do not have a counterpart in the patent as granted, the Board would have referred the question of the allowability of such a change of category to the Enlarged Board of Appeal, would it have been decisive in the present case (see also Decision T 402/89 of 12 August 1989, not intended for publication in OJ EPO).

5. The present sets of claims were filed at the beginning of the oral proceedings, i.e. not at the earliest possible date during the appeal proceedings. Nevertheless, since the Board is satisfied that the claims have only been reworded without their subject-matter being amended, it has decided to accept the late submission of these claims.

6. The most important issue to be decided in this appeal is that of the novelty of the subject-matter of Claims 1 of the main and auxiliary requests. Since Claim 1 of the auxiliary requests 1 and 3 corresponds to Claim 2 of the main and second auxiliary requests, it is sufficient to consider only Claims 1 and 2 of the main request.

6.1 Novelty of the subject-matter of these claims was disputed on the basis of documents (1) and (2). Both documents do not expressis verbis relate to the use of IDA to increase the sequestering ability of NTA but to the manufacturing of NTA.

In document (2) it is acknowledged that NTA was widely used as a sequestering agent (see col. 2, lines 4 to 14). However, this statement does not unambiguously relate to the product of the process described in that document, which is NTA containing IDA as a by-product. According to Examples 2 and 4, this by-product may be present in the amounts required by the present Claim 1. In these examples the product is obtained as an aqueous solution. The step of recovering the product from this solution, which is an essential step of the disclosed process (see Claim 1) is not shown in these examples. Conventional recovering procedures for NTA, however, may well involve recrystallisation (see document (3), page 340, left-hand column, second complete paragraph). Thus, in the absence of an unambiguous disclosure that the final product of the process of document (2) can be directly used as a sequestering agent, the Board holds that document (2) does not take away the novelty of the subject-matter of Claims 1 and 2.

6.2 However, document (1), which also describes a process for manufacturing NTA yielding a product which contains IDA in the amounts specified in the present Claims 1 and 2 (see Examples 1 and 2), does contain the express statement that the products so obtained were intended to "be used without purification or subsequent treatment for industrial purposes" (see col 2, lines 69 to 71). Although no particular "industrial purpose" is mentioned in document (1), the Board is satisfied that it was common general knowledge at the publication date of this document (21 September 1971) that the predominant industrial

purpose of NTA was the use as a sequestering agent. This finding is in agreement with all relevant facts before the Board, i.e. the disclosure in document (2), published 1968, and document (3), the paragraph bridging the columns of page 340. The Respondent's submission, based on document (4), in particular chapters 3.2 (builder) and 3.2.2 (Komplexbildner), that the use as a detergent builder is no more than an equivalent to the use as a sequestering agent, was not disputed by the Appellant at oral proceedings. Having regard to the fact that, according to common general knowledge, detergent builders act by complexation of the calcium and magnesium ions which are responsible for water hardness, a skilled person would, in the Board's judgment, have immediately inferred from the content of document (1) the unambiguous technical teaching to use the products of the process described therein without further purification as sequestering agents for calcium or magnesium ions or detergent builders. The product obtained according to Example 1 of this document is described as a powder which at a water content of 2% contains 91% by weight of the trisodium salt of NTA and, according to the Appellant's calculation, 2,8% by weight of the disodium salt of IDA. The corresponding product of Example 2 contains 90,5 % by weight of the tripotassium salt of NTA, and, as calculated by the Appellant, 3,4 % by weight of the dipotassium salt of IDA. The Appellant's allegation that some of the IDA may have decomposed during spray drying and that, therefore, the calculated percentages are no more than theoretical upper limits of the IDA was not based on any evidence. Since the Appellant therefore did not discharge his burden of proof, and since it is, in the Board's judgment, rather unlikely that any decomposition of IDA would occur under the conditions of spray drying, the Board cannot accept this argument. Thus, the compositions described in the examples fall within the ranges of Claims 1 and 2.

6.3 The Appellant has submitted that the present Claims are no longer directed to the use of the above mixtures, but to the use of IDA for the new purpose of increasing the ability of NTA to sequester calcium or magnesium ions. This purpose may have been inherently attained by following the teaching of document (1), but, in application of the reasoning in the decision G 2/88 of the Enlarged Board of Appeal, inherency did not destroy the novelty of this new use, which has to be regarded as a functional technical feature of the present Claims 1 and 2.

However, the Board is unable to accept this line of argument, since the facts of the present case differ significantly from those underlying the Decisions G 2/88, G 6/88 and T 231/85.

In G 2/88 and G 6/88 the legal question whether or not a claim to the use of a compound for a particular non-medical purpose was novel for the purpose of Article 54 EPC, having regard to a prior publication disclosing the use of that compound for a different non-medical purpose, so that the only novel feature in the claim is the purpose for which the compound is used, was answered as follows:

"A claim to the use of a known compound for a particular purpose, which is based on a technical effect which is described in the patent, should be interpreted as including that technical effect as a functional technical feature, and is accordingly not open to objection under Article 54(1) EPC provided that such technical feature has not been previously made available to the public."

The Appellant has submitted that this answer to the above legal question should also be applied in the present case because the improved sequestering activity caused by the presence of IDA in the known mixture was, so he argued, a functional technical feature in the sense of the above decisions.

However, the Board cannot accept this point of view. Both the above decisions, which are substantially identical with respect to the above question of law, refer to a new use of a known substance (see e.g. G 2/88, item 6.2, first sentence, item 7.1, fourth paragraph, item 7.2, first sentence and items 8 and 9), which does not exist in the present case. In particular, in item 9 it is stated that "a new technical effect which underlies the new use is a technical feature of the claimed invention". However, it follows from the proper interpretation of the content of document (1), as set out in paragraph 6.2 above, that the sequestering activity of the known mixture of NTA and IDA formed part of the state of the art. The only new information which was provided by the patent in suit and which was not yet made available to the public by document (1) was that the sequestering activity of the NTA/IDA-mixtures disclosed in document (1) had a sequestering activity which was better than that of pure NTA. However, a known effect cannot become novel for the sole reason that it is present to a hitherto unknown (greater) extent.

Thus, the present Claims 1 and 2 do not disclose a new use of IDA in the known mixture, but merely suggest to use it for the same purpose for which it was already used in document (1).

- 6.4 This finding is further confirmed by considering the question whether the additional information, which results from carrying out the technical instructions contained in the disputed patent, amounts to a technical contribution to the state of the art in the sense that it teaches the person skilled in the art to do something which he would not have done without this additional information.

Since the information to be considered, namely that the presence of IDA enhances the sequestering activity of NTA in a mixture of NTA and IDA which has already been proposed for use as a sequestering agent, provides no more than an additional reason to use this known mixture in the known way for the known purpose, no contribution to the state of the art in the above sense can be recognised. In other words, what the disputed patent in fact teaches, regardless of how the claims are worded, is to solve a known technical problem by known means, namely to sequester calcium and magnesium ions by NTA in mixture with the specified amounts of IDA, as already proposed by document (1). However, such an additional reason to do what has already been proposed earlier as a solution to the same technical problem cannot be regarded as a new functional technical feature in the sense of Decisions G 2/88 and G 6/88 of the Enlarged Board of Appeal.

7. As stated in point 6 above, the same considerations apply to Claims 1 of all requests. Consequently, in the absence of an allowable main claim, none of the sets of claims before the Board can form a basis for the maintenance of the patent and the remaining dependent and independent claims must fall together with the respective Claims 1.

Order

For these reasons, it is decided that

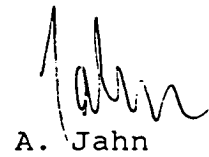
The appeal is dismissed.

The Registrar



E. Gorgmaier

The Chairman



A. Jahn