BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Publication in the Official Journal ~~Yes~~ / No

File Number: T 602/89 - 3.3.2

Application No.: 83 107 914.0

Publication No.: 0 102 003

Title of invention: Stabilised herbicide composition based on meta-biscarbamates

Classification: A01N 25/22

D E C I S I O N
of 21 november 1991

Proprietor of the patent: S.I.P.C.A.M. S.p.A. Società Italiana Prodotti Chimici e per l'Agricoltura Milano

Opponent: (01) Schering Aktiengesellschaft

(02) Rhône-Poulenc Agrochimie

Headword: Herbicide composition/SIPCAM

EPC Articles 56, 83, 123(2); 114(1) and (2)

Keyword: "Amendment of application - deletion of alternatives - disregard of late filed opposition ground" -
"Sufficiency of disclosure (yes) - definition of commercial products sufficient"
"Inventive step (affirmed) - unobvious alternative"

Headnote

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 602/89 - 3.3.2

D E C I S I O N
of the Technical Board of Appeal 3.3.2
of 21 november 1991

Appellant : (Opponent)
RHONE-POULENC AGROCHIMIE
14-20, rue Pierre Baizet
F - 69009 Lyon (FR)

Representative :
Eggert, Hans-Gunther, Dr.
Käderscheidtstrasse 1
W - 5000 Köln 41 (DE)

Respondent : (Proprietor of the patent)
S.I.P.C.A.M. S.p.A.
Società Italiana Prodotti Chimici
e per l'Agricoltura Milano
Viale Gian Galeazzo, 3
I - 20136 Milano (IT)

Representative :
Vatti, Paolo, Dr. Ing.
Fumero - Studio Consulenza Brevetti
Widenmayerstrasse 4/I
W - 8000 München 22 (DE)

Other party: (Opponent)
Schering Aktiengesellschaft
Postfach 65 03 11
W - 1000 Berlin 65 (DE)

Decision under appeal :
Decision of Opposition Division of the European Patent Office dated 02.08.89 rejecting the opposition filed against European patent No. 0 102 003 pursuant to Article 102(2) EPC.

Composition of the Board :

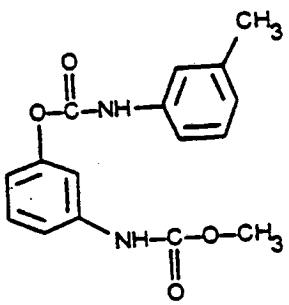
Chairman : P.A.M. Lançon
Members : A.J. Nuss
R.L.J. Schulte

Summary of Facts and Submissions

I. European patent No. 0 102 003 was granted with three claims in respect of European patent application No. 83 107 914.0.

The claims as granted read as follows:

"1. A stabilised herbicide composition formulated as an organic emulsifiable liquid or emulsion containing the compound of formula



(A)

together with one or more stabilisers based on polyethoxylated tristyryl- and distyrylphenol-phosphates, together with other adjuvants and liquid inerts.

2. Composition as claimed in claim 1 wherein the stabilisers concentration is between 0.5% and 50% by weight.

3. A method of application of a composition as claimed in claims 1 and 2 for the selective de-weeding of agricultural and horticultural crops in treatments after emergence, wherein between 0.15 kg/ha and 3 kg/ha of active substance of formula (A) are distributed."

II. The Appellant (Opponent 02) filed a notice of opposition against the European patent, requesting revocation of the patent on the ground that its subject-matter was lacking inventive step. From the documents cited in support of the

opposition only the following two remained finally relevant in this appeal:

(3) US-A-3 898 075
(5) FR-A-2 462 101.

III. The Opposition Division rejected the opposition. In its decision it took the view that despite a printing error in the application as filed the definition of the stabiliser to be used could be established. As shown in the "SOPROSOIE" document submitted by the Patentee, the commercially available stabiliser SOPROPHOR 3 D 33, i.e. one of the exemplified stabilisers, had been described as an "ester phosphorique d'arylphénoloxyéthylé".

Since the problem to be solved in the patent in suit consisted in stabilising Phenmedipham, i.e. active substance of formula (A), in emulsifiable concentrates or emulsions, none of the two most relevant documents, i.e. (3) US-A-3 898 075 and (5) FR-A-2 462 101, suggested to combine the herbicide with a phosphoric ester of polyethoxylated arylphenol.On the one hand, i.e. in document (3), said problem was solved by adding an acid as stabiliser, among which dodecylbenzenesulfonic acid known to possess surfactant properties.

On the other hand, i.e in document (5), stabilisation of the herbicide was obtained by using organic solvent mixtures, whereby in table I two of the exemplified compositions contained in addition the surfactant "ROLFEN 10 D", a compound structurally closely related to the stabiliser used in the patent in suit. These examples showed that the surfactant was actually not necessary for obtaining the stabilising effect. Consequently, these two documents did not try to solve the underlying problem by using a surfactant.

IV. The Appellant lodged an appeal against the said decision.

Oral proceedings, at which the duly summoned Respondent (Proprietor of the patent) was not represented, were held on 21 November 1991.

(i) In his Statement of Grounds of Appeal, the Appellant contested the decision of the Opposition Division and, for the first time, formally raised a number of objections under Article 100(b) and (c) EPC. The latter were based on an alleged confusion concerning the definition of the stabiliser to be used in combination with Phenmedipham. The Appellant argued in essence that the catalogue sheet submitted by the Respondent at the opposition stage showed that "SOPROPHOR 3 D 33", one of the commercial products disclosed in the original application, was described as an "ester phosphorique d'arylphénoloxyéthylé", i.e. a phosphoric ester of ethoxylated arylphenol, a compound actually different from that now claimed as a stabiliser. In addition, none of the trade names standing for commercial stabilisers allowed to clarify the chemical structure of the claimed stabilisers, because commercial designations could not be considered to have a precise meaning. Finally, it could not be readily understood what was meant in the patent in suit by ... stabilisers "based on" ... and it still remained open where in the claimed stabiliser a polyethoxy-chain, the length of which was unknown, should be located. At the oral proceedings before the Board, the Appellant also considered that in view of the unclear definition of the claimed stabiliser, two completely different structures were in competition for this compound: a) a structure having a polyethoxy-chain between the substituted phenolic group and the phosphoric group and b) a structure resulting from directly bonding a

substituted phenolic group to a phosphoric group having polyethoxy-groups as substituents on the phosphorus atom. He further considered that the stabiliser mentioned in example 1 of the patent in suit did not correspond to the stabiliser as claimed.

(ii) In respect of the question of inventive step, the Appellant argued in essence that example 4 and table I of document (5) were sufficient to show that surfactants such as "ROLFEN 10 D" or "AGROL L" (Ca dodecylbenzenesulphonate) had a stabilising effect on solutions containing Phenmedipham, DMF and Xylol. It could not be said, therefore, that the surfactants would not act as stabilisers in said compositions. Consequently, the compounds mentioned in document (3) and (5) were at the same time surfactants and stabilisers. The commercial product "SOITEM 8 FL" to be used in accordance with the patent in suit was thus nothing else than their equivalent.

V. The Respondent argued in its written submissions that "SOPROPHOR 3 D 33", a commercial product produced and sold by the Appellant, was clearly presented in the information bulletin earlier submitted as an "ester phosphorique d'arylphénoloxyéthylé". In accordance with two additional technical bulletins submitted to the Board in the Respondent's letter dated 18 July 1990 (see enclosures A and B), this product and the product "SOITEM 8 FL", both mentioned in the original application, were presented as members of a generic family defined as "ethoxylated tristyrylphenol phosphates", whereby a specific commercial formulation could obviously contain a certain amount of "distyrylphenol phosphates" formed during the synthesis. Both formulations had therefore to be equivalent. The man skilled in the art was thus not only given in the patent

in suit an accurate chemical definition of the stabilisers to be used, but he was informed at the same time that suitable formulations were readily available as commercial products.

According to the Respondent, it was moreover quite clear that in document (5) the additive "ROLFEN 10 D" was exclusively used as an emulsifier and not as a stabiliser of Phenmedipham solutions. Document (3) disclosed the stabilising effect of a number of acids on Phenmedipham solutions containing organic solvents and surfactants of the known type. Consequently, the claimed stabilised composition was not rendered obvious by the opposed documents, either taken alone or in combination.

VI. The Appellant requested that the decision under appeal be set aside and that the European patent be revoked. The Respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.

2. In the present appeal, the question arises whether the two belatedly submitted grounds of opposition, viz. that the invention as claimed does not meet the requirements of Article 100(b) and (c) EPC (see Point IV.(i) above), should be considered by the Board in accordance with Article 114 EPC.

2.1 The Board has first addressed to the objection under Article 100(c) EPC which tends to open a fresh line of attack on the present patent a long time after the expiry of the normal opposition period, viz. at the appeal stage. Such belated submission would therefore only be taken up by the Board if there were sufficiently strong indications

that the subject-matter of the European patent could indeed be suspected to extend beyond the content of the application as originally filed. It would be pointless to accept to introduce into the proceedings a late filed opposition ground which, on the basis of a summary examination, could be easily recognised as unsubstantial. This approach ensures a fair balance between the Board's inquisitorial power under Article 114(1) EPC on the one hand and its discretion under Article 114(2) EPC to disregard facts and evidence not submitted in due time on the other hand. In proceeding this way, the EPO's duty vis-á-vis the public not to maintain a patent which is not legally valid will be fully respected.

It follows from a short examination that the subject-matter of the patent in suit stems from a limitation by deletion of a large number of initially disclosed alternative stabilisers. This implies that the remaining subject-matter is all originally disclosed. In the absence of any detectable flaw in the claims and description of the patent in suit, the Board has made use of its discretion to disregard the Appellant's late submissions under Article 100(c) EPC (Article 114(2) EPC).

2.2 As to the Article 100(b) EPC objection, the Appellant does not contest that the issue of insufficient disclosure was not raised as such within the nine months' period of opposition. The initial objections clearly concerned exclusively the issues of novelty and inventive step under Article 100(a) EPC. However, in the course of the subsequent exchange of arguments between the parties on the issue of inventive step, the chemical definition of the stabiliser to be used in accordance with the teaching of the patent in suit was seriously called in question, as documented by Appellant's letter dated 14 November 1988 (see in particular point 5 on pages 3 and 4). At the oral

proceedings before the Opposition Division that issue turned into a major controversial point, as is apparent from the minutes of these oral proceedings and the Opposition Division's written decision. There can thus be no doubt that the definition of the stabiliser to be used in combination with Phenmedipham was extensively discussed before the first instance, albeit as a subsidiary issue within the main issue under Article 100(a) EPC.

It is thus not surprising that at the stage of appeal, attention was again paid to that question in the Appellant's and Respondent's written submissions. The relevant issue, therefore, did not constitute a new opposition ground, but actually crystallised from the ongoing discussion concerning the issue of inventive step duly raised within the nine-months' opposition period. It also follows from the preceding, that the Respondent had every opportunity - of which he made ample use - to fully argue this point.

2.3 In view of the above, the Board will thus examine in the following paragraphs whether the patent in suit discloses the invention described therein in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

2.3.1 The Appellant contended that it would not be possible for a man skilled in the art to know which chemical compound to take for carrying out the invention as described in the patent in suit, because the chemical name of the stabiliser to be used in combination with Phenmedipham could not be considered to allow an unequivocal identification of its chemical structure. The stabilisers being defined in the patent in suit as "polyethoxylated tristyryl- and distyryl phosphates", his opinion actually was that the man skilled in the art would be unable to find out which of the following two structures could be

considered to represent those of the claimed invention: (a) one having a polyethoxy-chain between the substituted phenolic group and the phosphoric group (i.e. structure a) or (b) one resulting from directly bending a substituted phenolic group to a phosphoric group having polyethoxy-groups as substituents on the phosphorous atom (i.e. structure b). He further objected that the stabiliser used in example 1 of the patent in suit, i.e. a tristyryl-phenolphosphate polyethoxylated with 17 moles of ethylene oxide, was not one of those claimed.

The Board notes that the Appellant manifestly encountered major difficulties when trying to make fit a (generic) molecular formula to the said chemical name used in the patent in suit for describing suitable stabilisers. However, what really matters is what the man skilled in the art would do when trying to carry out the invention as claimed. Having at his disposal the whole of the patent in suit, he would easily find out from the description that the proposed polyethoxylated tristyryl-and distyryl phosphates are for example products commercially available under the names SOPROPHOR or SOPRAL 3 D 33 (see page 2, lines 48 to 52). The Appellant accepted not only that these names should actually read SOPROPHOR 3 D 33 or SOPRAL 3 D 33, but also that both these products were freely available to the man skilled in the art which, therefore, was certainly in the position to carry out the invention on the basis of the information provided in the patent in suit. The Appellant has, moreover, submitted no evidence showing that the said products could be suspected not to have the stabilising effect on Phenmedipham stated in the patent in suit. This holds also good for the third commercial product, viz. SOITEM 8 FL, which is used as stabiliser in example 1 of the patent in suit.

2.3.2 It is certainly true that starting from the chemical name of the stabilisers, the man skilled in the art could have

tried in the present case to establish their molecular formulas. As a chemist, he is, however, acquainted with the well established practice not to use systematic nomenclature for routine scriptorial purposes, but to use instead, except for rigid cataloging or indexing, a great variety of trivial and semisystematic designations. Since the three technical bulletins submitted by the Respondent at different stages of the proceedings show that different producers of the compounds in question use the same or similar nomenclature as in the patent in suit (see point V above), the Board has no reason to believe that in the present case the chemical name used for describing the stabiliser is inaccurate or dubious. The question remains why this should be the case for the molecular formula it is supposed to stand for. However, apart from his own difficulties to write a structural formula for the claimed stabilisers, the Appellant has actually submitted nothing which shows that these difficulties also existed for the man skilled in the art.

Although enclosure A is not dated, this document represents evidence that the commercial product SOPROPHOR 3 D 33 mentioned in the patent in suit corresponds to the chemical definition of the stabiliser given in the main claim. This product, which is produced and sold by the Appellant itself, is clearly described as one of four "ethoxylated tristyrylphenol phosphates". The same also applies to enclosure B (dated November 1988), a technical bulletin showing that the product SOITEM 8 FL (used in example 1 of the patent in suit) is an ethoxylated tristyrylphenol phosphate with the following composition: ethoxylated tristyrylphenol phosphate 50-70% (typical 60%); ethoxylated distyrylphenol phosphate 30-50% (typical 40%).

In the absence of evidence to the contrary, it must thus be assumed that the commercially available products indicated in the patent in suit are typical examples of stabilisers in the sense of its Claim 1 and that, therefore, the man skilled in the art could manifestly carry out the claimed invention. It is true that the product SOITEM 8 FL used in example 1 of the patent in suit has a degree of ethoxylation which is different from that indicated for the same product in enclosure B (17 E.O. moles VS. 18 E.O. moles). However, both products clearly fall under the definition as given in the main claim for the stabilisers and there is nothing in the whole patent from which it could be concluded that there exists a critical degree of ethoxylation. In the absence of adequate evidence to the contrary, the Board has no reason to believe that a difference of 1 mole of ethylene oxide is significant for carrying out the invention without systematic failure.

2.4 It follows from the foregoing, that the Appellant's objections under Article 100(b) EPC must be rejected.

3. The patent in suit relates to a stabilised herbicide composition based on 3-methoxycarbonyl-aminophenyl-N-(3-methylphenyl)carbamate (i.e. Phenmedipham).

3.1 The closest state of the art is document (5) which relates to Phenmedipham compositions stabilised in a mixture of two solvents A and B. The former has a high dissolving power whereas the latter has a lower or no dissolving power at all. The overall effect of such a solvent mixture is the same as that of an equal amount of pure solvent A.

To the solutions thus obtained can be added ionic and nonionic surfactants, which allow to prepare aqueous emulsions. In two of the examples shown in table I, the surfactant is either a commercial product available under

the name ROLFEN 10 D (chemical compound of the type alkylphenol polyethoxylated phosphorylate) or a mixture of ROLFEN 10 D with other surfactants such as AGROL/L (calcium dodecylbenzenesulphonate) and SETROLENE O (polyethoxylated sorbitanoleate). The examples clearly show that the results, in terms of stability, do not vary when adding said surfactant; with or without stabiliser, the tested Phenmedipham compositions are not deteriorated at all when subjected to accelerated stability tests at 54°C (14 days) and 0°C (48 hours) (see Claims 1 to 3; page 2, line 37 to page 3, line 13; examples 1 and 4 in combination with table I).

3.2 In relation to the above prior art, the problem to be solved by the patent in suit can only be seen in providing an alternative for the known fully stabilised Phenmedipham compositions.

The solution to this problem consists essentially in a Phenmedipham composition containing one or more (surfactive) polyethoxylated tristyryl- and distyrylphenol phosphates (see Claim 1 and page 2, lines 34 to 56 of the patent in suit).

Having regard to the 1 month' stability test reported in table 1 of the patent suit, the Board is satisfied that the problem has been solved by the herbicide composition claimed.

4. None of the documents considered in the present proceedings disclose a composition as defined in Claim 1 of the patent in suit; this composition must thus be regarded as new. Since novelty has not been contested by the Appellant, it is not necessary to further investigate this matter.

5. It remains to consider whether or not the claimed solution to the above indicated technical problem meets the requirements of Article 56 EPC.

5.1 It follows from point 3.1 above that in document (5) the stabiliser is to be seen in a mixture of two solvents and not in the surfactant ROLFEN 10 D or its combination with AGROL/L and SETROLENEO. In example 1 a fully stabilised composition is described, containing said solvent mixture as sole stabiliser. This experiment is modified in example 4 by including one or several surfactants in addition to the stabilising solvent mixture already tested. The purpose of this last experiment is thus obviously to test the influence of the surfactant(s) on a fully stable Phenmedipham solution. Both experiments together show that the outstanding stability observed in the absence of the surfactants remains unaffected by such addition. In other words, the man skilled in the art is told that solvent stabilised Phenmedipham solutions will not suffer from surfactant additions. This makes sense, because a subsidiary object of that state of the art is to also prepare Phenmedipham solutions which may contain surfactant(s) (see page 3, line 10 and 11 and Claim 3). Consequently, there is clearly no trace of a suggestion to use the said surfactants as main or secondary stabiliser for Phenmedipham. Therefore, contrary to the Appellant's allegations, document (5) does not render obvious the solution which is now claimed in the patent in suit.

5.2 As to document (3), the Appellant has not succeeded to convince the Board either. The true teaching of this document is actually far away from what is alleged by the Appellant, as is apparent from the following:

(a) It is stated in this document that biscarbamates (e.g. Phenmedipham) containing liquid herbicide compositions are usually employed in the form of

liquid compositions in which the essential ingredients include at least one organic solvent and at least one surfactant in addition to the active agent. However, a disadvantage of such liquid compositions is that they are not sufficiently stable and decompose either slightly or fully during storage. As a consequence, the concentration of active agent changes, and the composition looses its effectiveness. Although a certain number of acids and salts (e.g. acetic acid, phosphoric acid) were recommended as stabilisers, they do not or do not adequately stabilise said liquid compositions.

(b) It is, therefore, proposed to incorporate therein as a stabiliser against decomposition of the herbicidal compound about 0,05% to about 5% by weight of at least one organic acid selected from the group consisting of aliphatic dicarboxylic acids, aliphatic hydrocarboxylic acids, nitrosubstituted aromatic monocarboxylic acids, aromatic dicarboxylic acids, aromatic sulfonic acids, and aliphatic sulfonic acids (benzenesulfonic and dodecylbenzenesulfonic acids are particularly suitable stabilisers).

(c) The said compositions also contain other usual ingredients such as surfactants (e.g. polyethoxylated amines, alcohols, acids and alkylphenols and salts of alkylated benzene- and naphthalenesulfonic acids).

(d) The examples 1 to 8 describe typical compositions including, among others, an emulsifier (a mixture of alkylbenzensulfonate, polyethoxylated fatty acid or polyethoxylated castor oil, and polyethoxylated alkylphenol) and said organic acid as stabiliser; significant decomposition of the active agent is recorded in the absence of stabilising acid.

This is indeed the real information to be found in document (3) (see column 1, line 7 to column 2, line 32; examples 1 to 8 (also example 1 "table") and Claim 1) ; the stabiliser is imperatively one of the organic acids mentioned above. Thus, no reason can be seen why the man skilled in the art would also consider a salt of dodecylbenzenesulfonic acid (e.g. its calcium salt) to be a suitable stabiliser. In accordance with what is stated in paragraphs (c) and (d) above, there can be no doubt that the latter are merely surfactants from which it is well known in the art that, at storage, they decompose either slightly or fully, the sole reason after all for adding on top of the surfactant(s) one of said organic acids.

5.3 The teachings of both documents (5) and (3) concur in that none of them would lead the man skilled in the art to attribute effective stabilising properties to the surfactants. These documents, either taken alone or in combination, could not therefore suggest to the man skilled in the art to use surfactive polyethoxylated tristyryl- and distyrylphenol phosphates as sole stabilising agent when trying to solve the problem indicated in point 3.2 above.

5.4 It follows from the preceding that the subject-matter of Claim 1 is not foreshadowed by the documents cited by the Appellant. It involves thus an inventive step in the sense of Article 56 EPC.

The same applies to dependent Claim 2 which derives its patentability from that of Claim 1.

Since the obtaining of the stabilised herbicide in question is unobvious, also the application of that composition for the selective de-weeding in accordance with Claim 3 must be considered as unobvious. This claim

has actually not been subject to a specific attack from the side of the Appellant.

6. Consequently, there are no grounds which prejudice the maintenance of the patent in suit in the form as granted.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

P. Martorana P.A.M. Lançon