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**Datasheet for the decision
of 10 January 2012**

Case Number: T 1326/08 - 3.3.01

Application Number: 03250329.4

Publication Number: 1332675

IPC: A01N 43/80

Language of the proceedings: EN

Title of invention:
Synergistic microbicidal combination

Patentee:
ROHM AND HAAS COMPANY

Opponent:
BASF SE

Headword:
MIT-based microbicides/ROHM AND HAAS

Relevant legal provisions:
EPC Art. 83, 54, 56

Relevant legal provisions (EPC 1973):

-

Keyword:
"Main request: sufficiency (no), synergy not achieved within whole range claimed"
"First auxiliary request: allowable - non-obvious further synergistic microbicidal compositions"

Decisions cited:
G 0001/03, T 0279/89, T 0393/01

Catchword:

-



Case Number: T 1326/08 - 3.3.01

D E C I S I O N
of the Technical Board of Appeal 3.3.01
of 10 January 2012

Appellant: BASF SE
(Opponent) D-67056 Ludwigshafen (DE)

Representative: Poganiuch, Peter
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Respondent: ROHM AND HAAS COMPANY
(Patent Proprietor) 100 Independence Mall West
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Representative: Buckley, Guy Julian
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
8 May 2008 concerning maintenance of the
European patent No. 1332675 in amended form.

Composition of the Board:

Chairman: P. Ranguis
Members: L. Seymour
L. Bühler

Summary of Facts and Submissions

I. European patent No. 1 332 675 was granted on the basis of three claims. Claim 1 as granted reads as follows:

"1. A microbicidal composition comprising a synergistic mixture, the first component of which is 2-methyl-3-isothiazolone, and the second component of which is the commercial microbicide benzoic acid; wherein the ratio of the first component to the second component is from 1/0.001 to 1/1000; and wherein the composition contains no more than 3% of halogenated 3-isothiazolone."

II. The opponent sought revocation of the patent in suit pursuant to Articles 100(c), 100(b) and 100(a) EPC (lack of novelty and inventive step).

III. The following documents were cited *inter alia* during the opposition/appeal proceedings:

(2) EP-A-0 544 418

(3) WO 00/10393

(5) WO 99/08530.

IV. The appeal lies from the interlocutory decision of the opposition division to maintain the patent in suit in amended form based on the main and sole request submitted with letter of 16 November 2006. This main request differed from the claim set as granted in the addition of the feature "based on combined weight of halogenated 3-isothiazolone and 2-methyl-3-

isothiazolone" at the end of claim 1 and in the deletion of claim 3.

The opposition division considered that the claimed subject-matter was novel over the cited prior art. With respect to the issue of inventive step, the opposition division identified document (2) as representing the closest prior art and defined the problem to be solved as lying in the provision of an alternative synergistic microbicidal combination comprising 2-methyl-3-isothiazolone (MIT). The claimed solution to this problem, namely, the addition of benzoic acid, was found not to be rendered obvious by the cited prior art. Although admitting that some of the specific ratios of components did not lead to synergism, the opposition division did not consider the degree of generalisation claimed to be objectionable, in view of the fact that the values at which synergism occurred would vary greatly depending on the targeted species.

- V. The appellant (opponent) lodged an appeal against this decision. In its statement of grounds of appeal, the appellant disputed the analysis and conclusions of the opposition division with respect to novelty over documents (3) and (5), and with respect to inventive step.
- VI. In its reply of 26 January 2009, the respondent (patentee) filed two auxiliary requests. The first auxiliary request consisted of a single claim, which differed from claim 1 of the main request forming the basis of the decision under appeal (cf. above point IV) in the limitation of the range of "from 1/0.001 to 1/1000" to "from 1/0.13 to 1/67". In the second

- auxiliary request, this range was further restricted to "from 1/0.13 to 1/40".
- VII. In a communication sent as annex to the summons to oral proceedings, the board expressed the opinion that the appellant's objection with respect to the breadth of the range of ratios claimed should be properly discussed within the framework of Article 100(b) EPC, that is, under the provisions of Article 83 EPC rather than Article 56 EPC, since the synergistic effect was expressed as a feature of the claim.
- VIII. Observations under Article 115 EPC, containing experimental data, were filed on 5 December 2011 by Thor GmbH.
- IX. With letter of 6 December 2011, the respondent filed additional experimental data.
- X. With letter of 5 January 2012, the respondent submitted a reply to the third party observations and requested that they should not be admitted into the proceedings.
- XI. Oral proceedings were held before the board on 10 January 2012.
- XII. The appellant's arguments, insofar as they are relevant to the present decision, may be summarised as follows:
- The appellant stated that it had no objections to the experimental data filed by the third party and the respondent with letters of 5 and 6 December 2011, respectively, being admitted into the proceedings.

Concerning its objections to the breadth of claim 1 of the respondent's main request, the appellant referred to Table 1 of the patent in suit. From the data provided for the microorganisms *C. albicans* and *P. aeruginosa*, it could already be concluded that synergy could not be achieved over the whole claimed breadth of component ratios. Moreover, for the two other microorganisms tested, namely, *A. niger* and *S. aureus*, antagonism had been observed.

With respect to the respondent's additional experimental data filed with letter of 6 December 2011, the appellant submitted that the values for the synergy index (SI) appearing on page 2 were erroneous. In fact, the correctly calculated values confirmed that, for certain ratios of microbicidal components, no synergy was observed for *C. albicans*.

Similarly, the experimental data of the third party demonstrated that, under certain conditions, synergy was also not observed for *C. albicans*. The fact that these experiments were not an exact replication of those disclosed in the patent in suit could not throw doubt on their relevance, since the claimed microbicidal compositions also had to be effective under a wide variety of conditions.

Based on the above evidence, the appellant submitted that the patent in suit failed to provide sufficient information in order to allow the skilled person to work the invention for the full scope of claim 1 of the main request, contrary to the requirements of Article 83 EPC.

With respect to the first auxiliary request, the appellant raised an objection under Article 84 EPC since it was not specified whether the ratios now claimed were based on weight or moles.

Concerning the issue of sufficiency, the appellant referred to its previous submissions with respect to the main request.

The appellant further argued that the subject-matter of the first auxiliary request lacked novelty with respect to documents (3) and (5). Document (3) disclosed synergistic biocide compositions comprising MIT and 3-iodo-2-propynyl-*N*-butylcarbamate (IPBC). Benzoic acid was included in a list of possible additional biocidal agents. This amounted to a direct and unambiguous disclosure of a composition comprising MIT, IPBC and benzoic acid, since it resulted from a selection within a single list. Furthermore, the range of ratios now claimed could not be recognised as conferring novelty, since the third criterion according to decision T 279/89 for a selection to be novel, namely, that the selected sub-range of numerical values should not be arbitrarily chosen from the known broader range, was not fulfilled. An analogous argumentation applied to document (5), which related to synergistic biocide compositions containing MIT and 1,2-benzisothiazolin-3-one (BIT).

In its assessment of inventive step, the appellant started from document (3) as constituting the closest prior art and defined the problem to be solved as lying in the provision of further synergistic microbicidal combinations comprising MIT. In its view, the solution

proposed, namely, the use of benzoic acid instead of IPBC as the second biocidal component lacked an inventive step. Thus, documents (2), (3) and (5) disclosed synergistic combinations of MIT with a large number of structurally diverse biocides. The skilled person would therefore derive from this combined teaching that MIT constituted a particularly suitable biocide for providing synergistic compositions, and would therefore have had a significant expectation of success that combinations with further known biocides, such as those listed on pages 5 and 6 of document (3), would also act synergistically. Indeed, this list included dichlorophene and benzisothiazolinone derivatives, which had already been disclosed as showing synergy in combination with MIT in documents (2) and (5), respectively. Even though potentially time-consuming, a screening process to ascertain further suitable candidates within the list disclosed in document (3), which included benzoic acid, would not require inventive skill. Once the suitable active ingredients had been identified, it would also only be a matter of routine testing to optimise their relative amounts. In this context, the appellant referred in particular to decision T 393/01, reasons point 2.6, in support of its argumentation that an inventive step could not be recognised on the basis of a synergistic effect that emerged from obvious tests.

XIII. The respondent's arguments, insofar as they are relevant to the present decision, may be summarised as follows:

The respondent objected to the admittance of the experimental data filed with letter of 5 December 2011

by the third party, as being filed too late to be fully evaluated and verified. In contrast, the respondent argued that its own submissions constituted a mere repetition of experiments disclosed in the patent in suit and would not therefore require extensive review.

In response to the appellant's sufficiency objection, the respondent maintained that the skilled person would fully understand how to make microbicidal compositions that contained MIT and benzoic acid in the ratios specified in claim 1 of the main request. The respondent conceded that some of the test examples presented in the patent in suit did not demonstrate synergy, but argued that the skilled person would expect variance depending on the targeted organism and the test conditions. It was therefore not realistic to expect positive results for each and every microorganism under all circumstances. For the purposes of sufficiency, what was important was that synergy could be achieved for the full range of ratios claimed. That this was the case was substantially supported by the results of the tests in the patent in suit, considered as a whole. Isolated rogue results, such as the 1/16 test conducted against *C. albicans*, or results from experiments conducted at a concentration near to the minimum inhibitory concentration (MIC) level for one of the individual components, such as the tests against *A. niger*, would be discounted by the skilled person and could not be seen as jeopardising sufficiency.

With respect to the results of its tests provided with letter of 6 December 2011, the proprietor was not able to explain the inconsistencies highlighted by the

appellant, but nevertheless submitted that they confirmed the previous data disclosed in the patent in suit.

Finally, the respondent argued that the data filed by the third party with letter of 6 December 2011 should be disregarded, since the tests had not been conducted in accordance with the patent in suit, and the experimental protocol provided did not correctly identify the culture medium used. The respondent's own investigations appeared to indicate that the broth used was not suitable for testing the chosen microorganism, *C. albicans*.

In response to the clarity objection raised by the appellant with respect to the first auxiliary request, the respondent noted that this deficiency had already been present in the claims as granted.

As to the issue of sufficiency of disclosure, the respondent argued that its previous submissions for the main request applied all the more to the limited range now claimed in the first auxiliary request.

On the question of novelty, the respondent submitted that the subject-matter claimed in the first auxiliary request was novel over documents (3) and (5) since benzoic acid was only mentioned as a possible third biocide in a long list without any mention of the amount to be used.

Turning to the issue of inventive step, the respondent maintained that document (2) represented the closest prior art, but agreed with the appellant's definition

of the problem to be solved. The claimed subject-matter involved an inventive step since there was no suggestion in the prior art which would have led a person skilled to the claimed combination as a solution to the problem posed.

- XIV. The appellant (opponent) requested that the decision under appeal be set aside and that the European patent No. 1332675 be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed (main request), or alternatively that the patent be maintained on the basis of the first or second auxiliary requests filed with its letter of 26 January 2009.

- XV. At the end of the oral proceedings, the decision of the board was announced.

Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of the experimental tests filed by the third party with letter of 5 December 2011 and by the respondent with letter of 6 December 2011*

No objection was raised by the appellant with respect to this issue.

It is noted that the respondent maintained in its letter of 6 December 2011 that its additional experiments had been performed in reply to the board's

communication annexed to the summons to oral proceedings (cf. above point VII). The board is prepared to accept this argument. However, the same reasoning holds true for the data submitted by the third party with letter of 5 December 2011. The argument of the respondent that the two sets of data should be treated differently is not considered to be convincing, since any potential counter experiments would have been equally time-consuming in both cases.

Accordingly, the board decided to exercise its discretionary power to admit both these sets of experimental data into the proceedings.

3. *Main request - Sufficiency of disclosure
(Articles 100(b), 83 EPC)*

3.1 The present invention as reflected in claim 1 relates to a microbicidal composition, with a defined upper limit for the content of halogenated 3-isothiazolone, and comprising a mixture of two components, namely, MIT and benzoic acid. Said mixture is characterised by the fact that

- it is "synergistic" and
- the ratio of the first component to the second component is "from 1/0.001 to 1/1000".

3.2 During the opposition proceedings an objection was raised that a synergistic effect could not be obtained for the full breadth of ratios claimed. In the decision under appeal, the opposition division treated this objection under the heading of inventive step (cf. above point IV). However, in the present case, the synergistic effect is expressed as a functional feature

of claim 1 (cf. above point 3.1). In a communication sent as annex to the summons to oral proceedings (cf. above point VII), the parties were informed that, under these circumstances, the question of breadth was to be discussed under the provisions of Article 83 rather than Article 56 EPC (cf. Enlarged Board of Appeal decision G 1/03, OJ 2004, 413, point 2.5.2). It is noted in this context that the opposition was *inter alia* based on the ground of Article 100(b) EPC (cf. above point II), which therefore belongs to the legal framework of the opposition.

3.3 In order to assess whether the requirement of sufficiency of disclosure is fulfilled in the present case, it must be assessed whether the patent in suit as a whole, that is, the claims and the description (including the example), makes available to the skilled person, in the light of his general common knowledge, all the information necessary for achieving the desired synergistic microbicidal effect within the whole range claimed, without undue burden.

3.4 Paragraphs [0032] to [0035] of the patent in suit provide detailed instructions as to how synergy tests were conducted and the corresponding values for the synergy index (SI) calculated. Both parties agreed that the tests performed are standard in the field. According to paragraph [0034], an SI value of less than one is indicative of synergy, and greater than one of antagonism. When the value is equal to one, additivity is indicated. Four microorganisms were evaluated, and the following data obtained (cf. Table 1 in patent in suit; component A = MIT, component B = benzoic acid, Q = concentration in ppm; emphasis added):

Microorganism	Q _a	Q _b	SI	A/B
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<i>A. niger</i> (1 week)	0	10000	1.00	----
	50	10000	1.17	1/200
	200	10000	1.67	1/50
	300	0	1.00	----

<i>C. albicans</i> (48 hours)	0	5000	1.00	----
	125	2000	1.03	1/16
	125	1000	0.83	1/8
	125	800	0.79	1/6.4
	125	600	0.75	1/4.8
	125	500	0.73	1/4
	125	400	0.71	1/3.2
	125	300	0.69	1/2.4
	125	200	0.67	1/1.6
	125	100	0.65	1/0.8
	125	80	0.64	1/0.64
	125	60	0.64	1/0.48
	125	50	0.64	1/0.4
	125	40	0.63	1/0.32
	150	30	0.76	1/0.2
	150	20	0.75	1/0.13
200	0	1.00	-----	

<i>S. aureus</i> (72 hours)	0	6000	1.00	----
	15	6000	1.25	1/400
	50	5000	1.67	1/100
	60	0	1.00	----

<i>P. aeruginosa</i> (72 hours)	0	6000	1.00	----
	15	2000	1.08	1/133
	15	1000	0.92	1/67
	15	800	0.88	1/53
15	600	0.85	1/40	

	15	500	0.83	1/33
	15	400	0.82	1/27
	15	300	0.80	1/20
	20	0	1.00	-----

3.5 It can be seen from the above table that, for combinations involving very different proportions of components, antagonism rather than synergy is regularly observed (see figures highlighted in bold). According to established case law of the boards of appeal, occasional failure does not impair reproducibility if only a few attempts are required to transform failure into success (see the "Case Law of the Boards of Appeal of the EPO", 6th edition 2010, chapter II, A-4.2). However, from the evidence in the above table, where repeated failure is encountered in a substantial part of the range of ratios recited in claim 1, it must be concluded that, on the basis of the guidance provided in the patent in suit, synergy cannot be achieved for the full range claimed.

3.6 The respondent's arguments in support of sufficiency are not considered to be convincing for the following reasons:

The respondent firstly attempted to explain away the "failures" in Table 1 as being isolated rogue results or as occurring as a result of experiments being conducted at concentrations near to the MIC levels for individual components. However, these arguments cannot dispel the above conclusion of the board. It is firstly noted that it cannot be assessed whether a specific result is in fact a singular deviation from the remaining data points (i.e. a rogue result) without

repetition of the experiment in question. Moreover, it must be assumed that the synergy tests described in paragraphs [0032] to [0036] of the patent in suit were conducted in a manner suitable for detecting synergism. Therefore, the fact remains that a general trend towards antagonism is discernible from Table 1 with increasing differences in the proportions of components (cf. above point 3.4). Indeed, in the paragraph immediately following Table 1 (i.e. paragraph [0037]), it is stated that "the synergistic ratios of MI/benzoic acid range from 1/0.13 to 1/67". Therefore, based on the evidence available in the patent in suit, strong doubts remain as to whether synergistic mixtures can be prepared over the full range of ratios claimed.

The respondent further sought to rely on its data filed with letter of 6 December 2011, even whilst acknowledging that this data clearly contained a systematic error, as demonstrated by the appellant at oral proceedings (cf. above point XII). The respondent conceded that it was unable to explain the origin of the error, for example, whether it lay in the calculation of the SI values, or in the MIC values Q_A or Q_B . Contrary to the submissions of the appellant, it cannot simply be assumed that the SI values had been calculated incorrectly. In view of these uncertainties, it is apparent that no sound conclusions can be derived from this data. For the sake of completeness, it is further noted that, although these experiments were designed to demonstrate synergistic behaviour across the whole of the claimed range, the ratios tested did not in fact lie anywhere close to the upper and lower limits of said range.

3.7 Consequently, the invention as defined in claim 1 of the main request fails to meet the requirements of Article 83 EPC.

4. *First Auxiliary request*

4.1 *Amendments (Articles 123(3), 123(2), 84 EPC)*

In claim 1 of the first auxiliary request, the range of ratios has been limited to "from 1/0.13 to 1/67". This amendment find its basis on page 9, lines 16 to 18 of the application as originally filed.

This claim has been restricted with respect to claim 1 of the granted version.

The amended request therefore meets the requirements of Article 123(2) and (3) EPC. This was not disputed by the appellant.

The appellant raised an objection under Article 84 EPC, because it was not specified whether the ratios claimed were based on weight or moles. However, since this deficiency already applied to the claims as granted and did not result from the amendments made, it is not open to objection under Article 84 EPC, which does not constitute a ground of opposition under Article 100 EPC.

4.2 *Sufficiency of disclosure (Articles 100(b), 83 EPC)*

4.2.1 In claim 1, the ratio of MIT to benzoic acid is now defined as being "from 1/0.13 to 1/67". As outlined above under point 3.4, routine methods are disclosed in the patent in suit for measuring the required

synergistic effect. The data for *C. albicans* and *P. aeruginosa* in Table 1 demonstrate that synergy can be achieved within this range. It is true that the entry for *C. albicans* with a ratio of MIT to benzoic acid of 1/16 has an SI value of slightly above 1. However, this can be seen as an isolated failure, which does not jeopardise the sufficiency of the disclosure, as explained above under point 3.5.

Hence, the board sees no reason to doubt that the patent in suit contains all the information necessary for achieving the desired synergistic microbicidal effect in the whole range claimed without undue burden.

- 4.2.2 The appellant's arguments cannot cast reasonable doubt on this assessment for the following reasons:

Concerning the appellant's criticism that, according to the data in the patent in suit, only antagonism had been obtained for certain microorganisms (*A. niger* and *S. aureus*), it should be noted that the functional feature of the claim only requires that the mixture be synergistic, without specifying a particular microorganism. There therefore can be no basis for requiring that the mixtures to act synergistically against all known microorganisms, nor would this be realistic. Thus, as long as adequate tests are provided in the patent in suit that allow the skilled person to establish without undue burden that synergism is achievable for the claimed mixture, the disclosure is to be regarded as being sufficient. As explained above under point 4.2.1, this has been plausibly demonstrated in the present case.

The appellant further relied on the respondent's additional experimental data filed with letter of 6 December 2011. However, as explained above under point 3.6, no reliable conclusions can be drawn from this data.

Concerning the arguments of the appellant based on the experimental data of the third party, it is noted that the question to be answered when assessing sufficiency is not whether conditions can be found where synergy is not observed. Indeed, the board concurs with the respondent that this will always be possible. The question is rather whether or not, when reproducing the standard methods disclosed in the patent in suit, synergy can be achieved for the composition as claimed. In the present case, the board cannot accept the experiments performed by the third party as being a fair reproduction of the teaching according to the patent in suit. As was pointed out by the respondent, the procedure deviates significantly from that disclosed in the patent in suit for *C. albicans*, for example, in the use of a Müller-Hinton broth as culture medium, instead of a potato dextrose broth. Consequently, the data submitted by the third party cannot be accepted as evidence in support of the objection of lack of disclosure.

- 4.2.3 In view of the above considerations, the requirement of sufficiency of disclosure is considered to be met by the first auxiliary request.

4.3 *Novelty (Articles 52(1) and 54 EPC)*

The appellant maintained its novelty objection with respect to documents (3) and (5).

Document (3) discloses synergistic biocide compositions comprising MIT and IPBC (e.g. page 7, lines 10 to 14; page 8, lines 3 to 11), and benzoic acid is included in a list of possible additional biocidal agents (see page 4, line 15 to page 6, line 22; in particular, page 5, line 12). An analogous disclosure is to be found in document (5) for mixtures of MIT and BIT (cf. page 8, lines 6 to 11; page 9, lines 21 to 29; and page 5, line 8 to page 7, line 8; in particular, page 5, line 26).

It is a general principle consistently applied by the boards of appeal that, for concluding lack of novelty, there must be a direct and unambiguous disclosure in the state of the art which would inevitably lead to subject-matter falling within the scope of what is claimed. In the present case, there is no disclosure in documents (3) or (5) as to the amounts or ratios for the optional additional biocidal agents with respect to the mandatory component MIT. It follows that the feature "from 1/0.13 to 1/67" relating to the ratio of MIT to benzoic acid cannot be unambiguously derived from the content of the cited prior art documents.

The board cannot accept the appellant's approach based on decision T 279/89. The criteria for selection inventions indicated therein relate to the selection of a sub-range of numerical values from a known broader range. In the present case, no broader range is

specified in documents (3) or (5), and no specific examples comprising benzoic acid are disclosed. The case law referred to by the appellant is therefore not applicable to the present situation.

Consequently, the subject-matter of claim 1 is novel over documents (3) and (5).

None of the remaining cited prior art documents disclose a composition according to present claim 1.

Accordingly, the subject-matter of the first auxiliary request meets the requirements of novelty.

4.4 *Inventive step (Articles 52(1) and 56 EPC)*

4.4.1 The subject-matter of claim 1 relates to a microbicidal composition comprising a synergistic mixture MIT and benzoic acid.

The board considers, in agreement with the respondent and the opposition division, that document (2) represents the closest state of the art. Document (3), suggested as a possible alternative by the appellant, relates to similar subject-matter to that dealt with in document (2), but is a less suitable starting point since it only discloses a single specific synergistic combination of MIT with IPBC, whereas document (2) provides a more general teaching with respect to the second component (see e.g. title of document (2)).

Document (2) relates to compositions formed from MIT and a second component selected from one or more of the group consisting of six specific biocides, namely,

sodium dichlorophene, bis(2-hydroxy-5-chlorophenyl) sulfide, benzylbromoacetate, dodecylamine, 4-(2-nitrobutyl)morpholine and dipropylamine ether. These compositions are disclosed as affording synergistic antimicrobial activity. The weight ratio of MIT to the second component is from about 40:1 to 1:32 (see page 2, lines 1 to 24).

- 4.4.2 The problem to be solved in the light of the closest prior art can be seen in the provision of further synergistic microbicidal compositions comprising MIT.

The solution as defined in claim 1 relates to a composition characterised in that the second component according to document (2) is replaced by benzoic acid.

Having regard to the working examples reported in the patent in suit, the board is satisfied that the problem has been plausibly solved.

- 4.4.3 It remains to be investigated whether the proposed solution would have been obvious to the skilled person in the light of the prior art.

As outlined above, document (2) itself discloses six components that provide synergistic combinations with MIT. However, in each case, the second component is structurally unrelated to benzoic acid. Document (2) does not contain any further teaching with respect to suitable further active ingredients. Therefore, document (2) taken alone does not provide any hint to the solution proposed.

Similarly, documents (3) and (5) disclose two further specific synergistic microbicidal composition comprising MIT. However, the combination partners disclosed, namely, IPBC and BIT, respectively, are again structurally remote from benzoic acid. Therefore, these documents also do not provide any pointer towards the present modification.

- 4.4.4 The board cannot agree with the appellant's argument that the combined teaching of documents (2), (3) and (5) would lead the skilled person to a significant expectation that combinations of MIT with further known biocides, such as benzoic acid, would also act synergistically. Whilst it is true that the suitable combination partners suggested in these documents are structurally diverse, it is also readily apparent that these compounds are very specifically defined. Thus, only individual compounds are listed without any suggestion of structural variation or generalisation thereof. Therefore, the clear teaching conveyed is that synergism will normally only be observed with combinations of MIT with specific individual compounds. In the case of documents (3) and (5), the synergistic effect is disclosed as being derived from the specific two-component combinations of MIT with IPBC and BIT, respectively. Contrary to the submissions of the appellant, there is no suggestion in these documents that would lead the skilled person to replace these mandatory components with any one of the further optional biocidal substances listed, in the expectation of maintaining synergy.

The appellant further cited decision T 393/01 in its attack on inventive step. The case dealt with in this

decision concerned a synergistic antimicrobial combination comprising hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine ("triazine") and iodopropargyl carbamate (IPC). In this case, the closest prior art disclosed biocidal compositions containing "triazine" and IPBC, and the board decided that the replacement of IPBC by IPC was rendered obvious in the light of a further prior art document showing that IPC was a more effective biocide than IPBC (see, in particular, reasons points 2.1 and 2.4). The present situation therefore differs from that dealt with in decision T 393/01, precisely because, as explained above, any such hint directing the skilled person to the present replacement is missing in the prior art.

4.4.5 Accordingly, since no teaching can be found in the cited prior art that would have led the skilled person to the present modification of the closest prior art compositions as a solution to the problem posed, it is concluded that the subject-matter of the first auxiliary request involves an inventive step.

4.5 *Adapted description*

The appellant did not object to the amended description submitted by the respondent during the oral proceedings before the board. The board is satisfied that the amendments merely serve to adapt the description to the amended claims.

5. In view of the outcome of the appeal, there is no need to consider the second auxiliary request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent as amended in the following version:

Description:

Pages 2, 3 and 5 received during oral proceedings.
Pages 4 and 6 (col. 9, l. 1 to 53) of the patent specification.

Claim:

No. 1 filed as first auxiliary request with letter of
26 January 2009.

The Registrar:

The Chairman:

M. Schalow

P. Ranguis