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Datasheet for the decision of 12 July 2018

Case Number: T 0182/17 - 3.3.09

Application Number: 98904827.7

Publication Number: 0963291

IPC: B32B27/18, C09D5/14, A01N43/40

Language of the proceedings: EN

Title of invention:
Discoloration prevention in pyrithione-containing coating compositions

Patent Proprietor:
Arch Chemicals, Inc.

Opponent:
Thor GmbH

Headword:

Relevant legal provisions:
RPBA Art. 13(1)
EPC Art. 56

Keyword:
Late-filed argument - admitted (no - change of case at the oral proceedings)
Inventive step - (no)

Decisions cited:
T 1106/10

Catchword:

Europäisches Patentamt
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Beschwerdekammern

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Case Number: T 0182/17 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 12 July 2018

Appellant: (Opponent)	Thor GmbH Landwehrstrasse 1 67346 Speyer (DE)
Representative:	Apenberg, Stefan THOR GmbH Landwehrstr. 1 67346 Speyer (DE)
Respondent: (Patent Proprietor)	Arch Chemicals, Inc. 501 Merritt 7, P.O. Box 5204 Norwalk, CT 06856-5204 (US)
Representative:	Thurston, Joanna Withers & Rogers LLP 4 More London Riverside London SE1 2AU (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 21 December 2016 maintaining European patent No. 0963291 in amended form**

Composition of the Board:

Chairman	W. Sieber
Members:	J. Jardón Álvarez
	D. Prietzel-Funk

Summary of Facts and Submissions

I. This decision concerns the appeal filed by the opponent against the interlocutory decision of the opposition division that European patent No. 0 963 291 as amended met the requirements of the EPC.

The opponent's appeal is the second appeal in the present case, the first appeal having been filed by the patent proprietor against the opposition division's first decision to revoke the patent.

II. The patent was granted with four claims, claim 1 reading as follows:

"1. An aqueous coating composition being a paint containing a single pyrithione salt, that being zinc pyrithione, wherein the paint is **characterized by**:

(a) water,
(b) a base medium being a resin selected from vinyl, alkyd, epoxy, acrylic, polyurethane and polyester resins, and combinations thereof,
(c) zinc pyrithione, in an amount of from 0.01% to 2.0% based upon the weight of the composition, and
(d) a zinc oxide compound selected from the many grades suitable for paint manufacture at a concentration of from 0.02% to 0.5% based upon the weight of the coating composition."

Claims 2 to 4 were dependent claims.

III. In the notice of opposition the opponent had requested revocation of the patent in its entirety on the basis of Article 100(a) EPC (lack of novelty and lack of inventive step).

The documents cited during the opposition proceedings included:

D2: US 4 161 526 A;

D5: US 5 562 995 A;

D6: English translation of JP 52-092881 A;

D8: EP 0 345 995 A1; and

D12:"Results of Field Trial Reference NB A16404/500 and A1640501 pg 12". Arch Biocides (2 pages).

IV. In its first decision the opposition division did not admit the fresh ground for opposition based on Article 100(c) EPC against granted claims 2 and 3 into the proceedings, because it was *prima facie* not relevant. It revoked the patent because the subject-matter of granted claim 1 was anticipated by D8 and because the subject-matter of the then pending auxiliary request did not meet the requirements of Articles 84, 123(2) and 54 and Rule 80 EPC.

V. In the first appeal proceedings this board, albeit in a different composition, held that the opposition division had erred in deciding that the ground for opposition under Article 100(c) EPC was not *prima facie* relevant for claim 3 (T 1106/10, Reasons 3.2). The board then remitted the case to the opposition division for further prosecution.

VI. Following remittal, the opposition division held in a second decision that the patent as amended on the basis of claims 1 and 2 of the first auxiliary request filed

on 6 December 2016 during the oral proceedings met the requirements of the EPC. Claim 1, found allowable, read as follows (amendments to granted claim 1 underlined):

"1. An aqueous coating composition being a paint containing a single pyrithione salt, that being zinc pyrithione, wherein the paint is characterized by:

(a) water,

(b) a base medium being a resin selected from vinyl, alkyd, epoxy, acrylic, polyurethane and polyester resins, and combinations thereof,

(c) zinc pyrithione, in an amount of from 0.01% to 2.0% based upon the weight of the composition,

(d) a zinc oxide compound selected from the many grades suitable for paint manufacture at a concentration of from 0.02% to 0.5% based upon the weight of the coating composition; and

(e) dissolved ferric ions,

wherein the molar amount of zinc ions is at least equal to the amount of dissolved ferric ions."

Claim 2 was a dependent claim.

VII. The opposition division's second decision may be summarised as follows:

- Having regard to the then pending main request, the opposition division did not admit the late-filed grounds for opposition under Articles 100(b) and 100(c) EPC into the proceedings, because they were *prima facie* not relevant. It rejected this main request because the subject-matter of claim 1 lacked novelty in view of D8.

- The claims of the first auxiliary request met the requirements of the EPC. With respect to inventive

step, the opposition division regarded the disclosure of D5 as the closest prior art and defined the problem to be solved by the invention merely as the provision of further compositions for the same use as those disclosed in the state of the art. There was nothing in D5 itself or in any other document which would provide the skilled person with the motivation to use zinc oxide in the claimed concentration. In this context, documents D2 and D6 were considered.

VIII. This decision was appealed by the opponent (in the following: the appellant). With the statement setting out its grounds of appeal the appellant requested that the opposition division's decision be set aside and that the patent be revoked in its entirety. It further requested acceleration of the proceedings and reimbursement of the appeal fee according to Rule 103 EPC.

IX. With its reply the patent proprietor (in the following: the respondent) requested that the appeal be dismissed.

X. In a communication dated 2 January 2018, the board refused the appellant's request for acceleration, but gave the case a certain priority in view of the fact that this was already the second appeal. It further indicated the points to be discussed during the oral proceedings. With regard to inventive step, it expressed its preliminary opinion that it tended to disagree with the opposition division's finding that the claimed subject-matter involved an inventive step when the problem was formulated as the provision of alternative compositions for the same use as those disclosed in the closest prior art.

XI. The appellant filed a further submission on 7 May 2018.

XII. On 12 July 2018 oral proceedings were held before the board. During the discussion on inventive step the respondent amended its case by relying for the first time on D12 as evidence of a purposive selection within the teaching of D5. The appellant withdrew its request for reimbursement of the appeal fee.

The claims of the respondent's sole request are the claims found allowable by the opposition division (see point VI above).

XIII. The appellant's arguments where relevant for the present decision may be summarised as follows:

- Document D12 was late-filed and should not be admitted into the proceedings. If the board were to admit D12, the counter-evidence filed by the appellant during the opposition proceedings should be admitted too.

- The claimed subject-matter lacked inventive step in view of the teaching of D5 alone. The only difference between the claimed coating compositions and those disclosed in D5 was the use of zinc oxide in a concentration of from 0.02 to 0.5% based upon the weight of the coating composition, a concentration range falling within the broad range disclosed in D5. No improved discolouration or antimicrobial efficacy of the claimed compositions had been experimentally shown by the respondent. On the contrary, example 3 of the patent appeared to indicate that better results could be achieved when using larger amounts of zinc oxide. Thus, the problem to be solved was merely how to provide

alternative coating compositions, and the claimed solution was an arbitrary selection within the teaching of D5 and therefore obvious for the skilled person.

XIV. The respondent's relevant arguments may be summarised as follows:

- The concentration of zinc oxide required by claim 1 represented a purposive selection within the broad teaching of D5. This was clear from the experimental evidence filed during opposition proceedings, namely D12, a document which had already been filed nine years before and had been used by the appellant in the statement setting out its grounds of appeal.

- The closest prior art was represented by D5. One of the differences between the claimed subject-matter and D5 was that the zinc oxide concentration used in D5 was substantially larger than the range now claimed. The effect of such a measure was to improve both anti-discolouration properties and antimicrobial efficacy as set out in the application as filed.

- There was no guidance in D5 to bring the zinc oxide concentration to within the now claimed range with an expectation of achieving such improved properties. On the contrary, the amount used in example 2 of D5 was much higher than the upper limit of the range now claimed. D5 did not provide any hint to use such a low amount. Consequently, the claimed subject-matter was not obvious in view of the cited prior art.

XV. The appellant requested that the decision under appeal be set aside and that European patent No. 0 963 291 be revoked in its entirety.

The respondent requested that the appeal be dismissed.

Reasons for the Decision

1. Procedural matters

1.1 During the oral proceedings before the board, the respondent relied, for the first time in appeal proceedings, on the experimental evidence D12 to argue that the concentration of zinc oxide required by claim 1 represented a purposive selection within the teaching of D5.

1.2 The appellant objected to the admission of D12 and the respondent's new line of defence. It further requested that, if D12 were admitted into the proceedings, its counter-evidence filed during the opposition proceedings also be admitted into the appeal proceedings.

1.3 According to Article 13(1) RPBA, it lies within the discretion of the board to admit any amendment to a party's case after it has filed its grounds of appeal or reply. Its discretion is to be exercised in view of *inter alia* the complexity of the new subject-matter, the current state of the proceedings and the need for procedural economy.

1.3.1 Document D12 was filed by the respondent by letter of 4 November 2009, i.e. well after the nine-month opposition period. Its admission into the proceedings

was therefore at the discretion of the opposition division. In its first decision the opposition division did not admit D12 into the proceedings pursuant to Rule 116(1) EPC (point 4 of the reasons and point 11 of the facts and submissions of the second decision now under appeal). In its second decision, the opposition division did not come to any conclusion on the admission of D12 (last page of the corrected version of the minutes, dated 2 February 2017).

Notwithstanding the above, the opposition division indicated in the second decision now under appeal that D12 could not be considered relevant for the assessment of inventive step in the claimed subject-matter (page 15).

1.3.2 Although D12 was mentioned by the appellant in its statement of grounds of appeal in support of a lack of clarity objection (last paragraph of page 2 of the statement of grounds of appeal), the respondent did not comment on the document or rely on it in its reply to the grounds of appeal.

The respondent also did not reply to the board's preliminary view that "[i]n the absence of an unexpected effect, it appears to be doubtful that the selection of a zinc oxide amount within the broad range disclosed in D5 could justify an inventive step" (point 8.5 of the board's communication dated 2 January 2018).

1.3.3 Hence, the respondent's change of case at the oral proceedings raised new complex issues concerning not only the admission of D12 into or its status in the appeal proceedings, but also the admission of the appellant's experimental counter-evidence filed during

opposition proceedings, which was not mentioned at all up to the day of the oral proceedings. Furthermore, the relevance of D12 and the appellant's counter-evidence has never been discussed in the appeal proceedings.

1.3.4 If the respondent intended to rely on D12 in appeal proceedings, it could and should have elaborated on the document and the issues associated with it in its reply to the grounds of appeal or, at the latest, in direct reply to the board's negative preliminary view on the inventive step issue. Furthermore, the board notes that the respondent's change of case was not triggered by a new submission by the appellant during the oral proceedings.

1.3.5 In this context, the board can also not accept the respondent's argument that it did not feel the need to rely on D12 prior to the oral proceedings. Apart from the fact that, as set out above, the case based on D12 should have been made earlier in the proceedings, such an approach also runs counter to the need for procedural economy.

1.4 Consequently, the board exercised its discretion not to admit the respondent's change of case (based on D12) into the proceedings under Article 13(1) RPBA.

2. *Inventive step*

2.1 The invention is directed to aqueous compositions containing pyrithiones having enhanced antimicrobial efficacy and resistance to discolouration, both in their wet state and, after drying, in the form of a dry film on a substrate (paragraph [0001] of the patent specification).

2.2 Pyrithiones like zinc pyrithione are well-known as broad-spectrum antimicrobial additives for use in paints, adhesives, caulks and sealants. In the presence of unwanted ferric ions, compositions containing zinc pyrithione are said to cause discolouration problems as well as a lowering of antimicrobial performance (paragraphs [0004] and [0009]). The invention aims to overcome such drawbacks.

2.3 Closest prior art

2.3.1 D5 was agreed to represent the closest prior art. Like the patent in suit, it relates to inhibiting the formation of discolouration in, for example, a water-based paint, caused by the presence of ferric ion or cupric ion together with pyrithione salts in said paint. The paint composition is contacted with a discolouration-inhibiting amount of a zinc compound selected from the group consisting of zinc salts of organic acids or inorganic acids, zinc hydroxide, zinc oxide, or combinations thereof (column 2, lines 40 to 54). It is quite clear from D5 that the pyrithione salts have excellent antimicrobial properties.

2.3.2 The resins in the paints are preferably selected from the group consisting of vinyl, alkyd, epoxy, acrylic, polyurethane and polyester resins and combinations thereof (paragraph bridging columns 4 and 5). The amount of zinc compound added can vary over a wide range of between 0.001% or lower to 10% or greater, based upon the weight of the aqueous composition in which it is employed. The discolouration associated with tap water contamination by iron or copper is suitably reduced or avoided by incorporating into said composition an amount of between 10 ppm and 90 ppm,

more advantageously between 10 ppm and 70 ppm, of the zinc ion (column 4, lines 7 to 19).

2.3.3 Example 2 investigated the efficacy of zinc oxide in eliminating blue discolouration caused by the presence of ferric ion in a paint containing zinc pyrithione. The paint contained 1.0% zinc oxide, 3000 ppm of zinc pyrithione and ferric ion at a concentration of 64 ppm. Thus, the molar amount of zinc ions present in the paint of example 2 is higher than the amount of ferric ions.

2.3.4 It is apparent from the above analysis of D5 that all the features of claim 1 are disclosed in the more general disclosure of D5. However, the subject-matter of claim 1 is novel over D5, because (a) the amount of zinc oxide used in example 2 is too high, and (b) a multiple selection within the general disclosure of D5 would be necessary in order to arrive at an embodiment falling within the scope of claim 1.

2.4 Problem and solution

2.4.1 In its reply to the grounds of appeal, the respondent defined the technical problem to be solved by the invention as the provision of a composition having improved anti-discolouration properties (page 5, third full paragraph). During the oral proceedings it argued that the problem to be solved had to be seen in the provision of an improved composition contributing **both** to antimicrobial efficacy **and** to anti-discolouration properties.

2.4.2 There is, however, no evidence on file that any improvement (antimicrobial efficacy and/or anti-discolouration) has been achieved by the selection of

the features now claimed, in particular the concentration of zinc oxide. In this context, the board notes that there is not a single example in the patent in suit disclosing an aqueous paint composition as claimed. Nor is there a valid comparison which would demonstrate that the compositions now claimed provide any technical effect within the more general disclosure of D5.

2.4.3 The board can also not accept the respondent's argument that the statement on page 8, lines 4 to 9 (the identical statement can be found in paragraph [0015] of the patent specification), shows that the above problem is credibly solved. This statement reads:

> "It has now been found that the presence of zinc oxide within the preferred range of from 0.02% to 0.5% by weight, based upon the weight of the coating composition, in a pyrithione-containing coating composition contributes both to antimicrobial efficacy and avoidance of undesirable blueing or other discoloration of the coating composition...".

In the absence of experimental evidence showing a technical effect for the claimed compositions, the board considers the statement relating to improved antimicrobial efficacy and improved anti-discolouration properties to be a mere allegation, which has to be disregarded.

2.4.4 In view of the above, an improvement cannot be acknowledged as the objective problem underlying the invention. Consequently, the problem has to be formulated in a less ambitious manner not involving such an improvement.

The objective problem is thus to be seen in the provision of further compositions having anti-discolouration and antimicrobial properties beyond those explicitly mentioned in D5.

2.4.5 It is undisputed that this less ambitious problem is solved by the claimed compositions.

2.5 Obviousness

2.5.1 In the absence of any improvement, the claimed compositions have to be considered as an obvious choice from within the general disclosure of D5. Neither the selection of zinc oxide as zinc compound nor the selection of its amount from within the more general disclosure of D5 can justify an inventive step, for the following reasons:

- Zinc oxide is actually one of the preferred compounds in D5, as is evident from its use in examples 1 and 2. Therefore, it would be an obvious choice for the skilled person.

- As regards the amount of zinc oxide used, taking into account that it has not been shown that this amount is linked to a particular effect, the selection of the claimed range from within the broader range disclosed in D5 amounts to an arbitrary selection which does not involve any inventive step.

2.6 For these reasons the subject-matter of claim 1 lacks inventive step starting from D5 as the closest prior art. Consequently, the appellant's sole claim request is not allowable.

3. In view of the negative outcome on inventive step, there was no need to decide on the other objections raised by the appellant.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

T. Buschek W. Sieber

Decision electronically authenticated