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Datasheet for the decision of 5 March 2018

Case Number: T 1495/13 - 3.3.01

Application Number: 03796787.4

Publication Number: 1571905

IPC: A01N25/12, A01N33/20, C07D213/89, C07F9/80

Language of the proceedings: EN

Title of invention:
SMALL PARTICLE COPPER PYRITHIONE

Patent Proprietor:
Arch Chemicals, Inc.

Opponent:
Johansen, Marianne

Headword:
Copper pyrithione particles/ARCH

Relevant legal provisions:
EPC Art. 100(b), 83

Keyword:
Sufficiency of disclosure: main request (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 1495/13 - 3.3.01

D E C I S I O N
of Technical Board of Appeal 3.3.01
of 5 March 2018

Appellant: (Patent Proprietor)	Arch Chemicals, Inc. 501 Merritt 7, P.O. Box 5204 Norwalk, CT 06856-5204 (US)
Representative:	Banse & Steglich Patentanwaltskanzlei Herzog-Heinrich-Straße 23 80336 München (DE)
Respondent: (Opponent)	Johansen, Marianne c/o Zacco Denmark A/S Hans Bekkevolds Allé 7 2900 Hellerup (DK)
Representative:	Zacco Denmark A/S Arne Jacobsens Allé 15 2300 Copenhagen S (DK)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 17 April 2013 revoking European patent No. 1571905 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	A. Lindner
Members:	J. Molina de Alba
	L. Bühler

Summary of Facts and Submissions

I. European patent No. 1 571 905 was granted with *inter alia* the following independent claims 1, 11 and 13:

"1. A composition comprising small solid antimicrobial particles of copper pyrithione having a particle size within a range of from 0.1 to 10 µm (microns) and a median particle size of from 0.5 to 3.0 µm (microns) said small particles having enhanced antimicrobial efficacy, as compared to larger size copper pyrithione particles, in a marine paint that is exposed to cold water environment of from 5 degrees Centigrade to 15 degrees Centigrade, said small particles of copper pyrithione exhibiting a leach rate of at least one microgram per square centimeter per day based on exposure of said paint to said cold water environmental, when measured at a cold water temperature of 10.6°C.

...

11. A method of making a non-dusting dispersion of small solid antimicrobial particles of copper pyrithione dispersed in a liquid dispersant comprising dispersing the small particles of pyrithione defined in claim 1 in a liquid dispersant wherein at least 99% of the dispersion is free of airborne solid copper pyrithione particles; and wherein when said dispersion is incorporated into a paint, said small particles having enhanced antimicrobial efficacy, as compared to larger size copper pyrithione particles, in a marine paint that is exposed to a cold water environment of from 5 degrees Centigrade to 15 degrees Centigrade, said small particles of copper pyrithione exhibiting a

leach rate of at least one microgram per square centimeter per day based on exposure of said paint to said cold water environment, when measured at a cold water temperature of 10.6°C.

...

13. A method of making a non-dusting dispersion of small solid antimicrobial particles of copper pyrithione dispersed in a liquid dispersant comprising the steps of:

(a) dispersing larger solid particles of copper pyrithione in a liquid dispersant to provide a liquid dispersion have said larger solid particles dispersed therein, and

(b) subjecting said liquid dispersion of copper pyrithione to a force selected from grinding, milling, pulverizing, sonicating, and combinations thereof, in order to reduce the size of said larger size particles in said dispersion within a size range of from 0.1 to 10 µm (microns), and a median particle size of from 0.5 to 3.0 µm (microns).

wherein at least 99% of the dispersion is free of airborne solid copper pyrithione particles; and wherein when said dispersion is incorporated into a paint, said small particles having enhanced antimicrobial efficacy, as compared to larger size copper pyrithione particles, in the marine paint that is exposed to a cold water environment of from 5 degrees Centigrade to 15 degrees Centigrade, said small particles of copper pyrithione exhibiting a leach rate of at least one microgram per square centimeter per day based on exposure of said

paint to said cold water environment, when measured at a cold water temperature of 10.6°C."

II. The following document cited in opposition/appeal proceedings is referred to in the present decision:

(10) Standard test method for determination of copper release rate from antifouling coatings in substitute ocean water. ASTM-D6442-06, reapproved in 2012 (originally approved in 1999).

III. An opposition was filed and revocation of the patent in suit was requested pursuant to Articles 100 (b) and 100 (a) EPC (lack of novelty and inventive step).

IV. The present appeal by the patent proprietor (appellant) lies from the decision of the opposition division to revoke the patent. The decision was based on the patent as granted as the main and sole request.

In the decision (see points 3.1a and 3.1b of the Reasons), the opposition division rejected the objections of lack of sufficiency of disclosure raised by the respondent (opponent) in relation to the features particle size, median particle size, antimicrobial efficacy and larger antimicrobial efficacy. However, even though the skilled person could measure the copper pyrithione leach rate defined in granted claims 1, 11 and 13 by modifying the standard method of document (10), the lack of specification in the patent of the paint that should be taken as reference for assessing that leach rate caused a problem of sufficiency of disclosure (see decision points 3.1c to 3.1cii).

V. In its statement of grounds of appeal, the appellant requested the remittal of the case to the opposition division for further prosecution on the basis of the patent as granted (main request) or the claim sets filed therewith as auxiliary requests I and II.

A further set of claims was filed with letter dated 27 October 2014 as auxiliary request III.

VI. In a communication annexed to the summons to oral proceedings, the board gave its preliminary opinion, which was that the objection of lack of sufficiency of disclosure directed to the determination of the copper pyrithione leach rate was rather an objection of lack of clarity and that the possible deficiencies in the definition of the test in granted claim 1 would not prevent the skilled person from carrying out the invention without undue burden.

VII. With letter dated 4 January 2018, the appellant filed five claim sets as auxiliary requests 1 to 5, wherein auxiliary requests 2 to 4 corresponded to previous auxiliary requests I to III, respectively.

VIII. Oral proceedings were held before the board on 5 March 2018. The respondent was absent, as previously announced with letter dated 5 February 2018.

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

On the objection of sufficiency of disclosure related to the leach rate defined in granted claim 1, the appellant maintained that it was an objection of lack of clarity and therefore could not be raised in opposition.

The leach rate of a composition from a marine paint was a common parameter and, in the particular case of copper pyrithione particles, it could be measured by the international standard method ASTM-D6442 referred to in the patent in paragraphs [0045] and [0053] and disclosed in document (10). As noted in paragraph [0053], the method had to be modified to carry out the measurement at 10.6°C, i.e. the temperature defined in claim 1. In addition, the required leach rate of at least 1 µg/cm^2/day was obtained using copper pyrithione particles with the sizes disclosed in granted claim 1, as evidenced by example 2 and Figure 1 in the patent. Accordingly, the skilled person knew how to measure and how to achieve the leach rate defined in granted claim 1 without undue burden. The opponent had not provided any proof to the contrary.

Concerning the issue of sufficiency of disclosure directed to the feature "non-dusting" in granted claim 13, the appellant argued that this issue had not been raised in opposition proceedings and therefore could not be raised in appeal. Moreover, it was an objection of lack of clarity.

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

With regard to the issue of sufficiency of disclosure in relation to the leach rate defined in granted claim 1, the respondent argued that the patent specified neither the method nor the reference marine paint that had to be used for measuring the leach rate.

Paragraph [0053] referred to a "modified ASTM leach rate method", but failed to specify the particular ASTM method and the nature of the modification referred to. Thus, as the specific measuring conditions (e.g. pH, salinity, copper concentration and time) may drastically affect the resulting leach rate, the skilled person could not determine it without undue burden. Similarly, the lack of specification of the marine paint that should be used for reference was critical because a broad range of marine paints were known, and different paints would exhibit different leach rates. As a result, one and the same composition could fall simultaneously inside and outside the scope of claim 1, depending on the paint of reference used for measuring the leach rate. Hence, the skilled person could not find sufficient information in the patent to carry out the invention.

Regarding the feature "non-dusting" in granted claim 13, the respondent submitted that the patent did not indicate any method for determining whether a dispersion was non-dusting. Therefore, the skilled person could not carry out the method of granted claim 13 without undue burden.

XI. The final requests of the parties were as follows:

- The appellant requested that the decision under appeal be set aside and that the case be remitted to the opposition division for further prosecution on the basis of the claims as granted or, alternatively, on the basis of the claims of one of auxiliary requests 1 to 5 filed with letter dated 4 January 2018. The appellant further requested that the respondent's submission of 5 February 2018 not be admitted into the appeal proceedings.

- The respondent had requested in writing that the appeal be dismissed or, alternatively, that the case be remitted to the opposition division for further prosecution. The respondent also requested that auxiliary requests 1 and 5 not be admitted into the appeal proceedings.

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

Reasons for the Decision

1. The appeal is admissible.

2. The respondent did not attend the oral proceedings before the board, as announced with letter dated 5 February 2018. In view of this and in accordance with Rule 115(2) EPC and Article 15(3) RPBA, the board maintained the oral proceedings and treated the respondent as relying on its written case only.

Considering that the facts and evidence on which the present decision is based were known to the respondent from the written proceedings and that it had sufficient opportunity to present its comments, the board was in a position to announce a decision at the conclusion of the oral proceedings, in accordance with Article 15(6) RPBA.

3. Sufficiency of disclosure - main request (patent as granted) - Articles 100(b) and 83 EPC

In opposition proceedings, the respondent raised objections of lack of sufficiency in relation to the features in the granted claims of particle size, median particle size, antimicrobial efficacy, larger antimicrobial efficacy, copper pyrithione leach rate and non-dusting. However, in its decision (see points 3.1a and 3.1b), the opposition division rejected the objections directed to the features particle size, median particle size, antimicrobial efficacy and larger antimicrobial efficacy. This aspect of the appealed decision has not been contested by the respondent in the present appeal, and the board sees no compelling reasons to reverse the decision in this respect either.

It is therefore uncontested that the patent contains sufficient information for the skilled person to prepare a composition comprising copper pyrithione particles with a particle size of 0.1 to 10 µm and a median particle size of 0.5 to 3.0 µm, and that said composition exhibits a higher antimicrobial efficacy than an analogous composition with larger copper pyrithione particles, when the composition is incorporated into a marine paint and exposed to a water environment of 5 to 15°C.

Accordingly, the dispute with regard to sufficiency of disclosure in the present appeal concerns exclusively the leach rate of the copper pyrithione particles defined in independent claims 1, 11 and 13, and the feature "non-dusting" in claims 11 and 13.

3.1 Leach rate

Although the arguments in this section make reference to claim 1 only, they apply likewise to claims 11 and 13, as they refer to the same particles and leach rate.

3.1.1 The respondent concurred with the opposition division that the skilled person could not prepare a composition as defined in granted claim 1 because the patent lacked essential information on how to determine the leach rate defined in that claim. Two aspects were discussed in this respect: the method that should be used for measuring the leach rate, and the marine paint of reference that should be used in that method.

3.1.2 On the first aspect, the patent states in paragraphs [0045] and [0053] that the leach rate of copper in marine paints is measured by an ASTM standard method. Although these passages do not explicitly mention the particular ASTM method to which they refer, in view of document (10) (see title and footnote 1, second sentence), the board is convinced that, at the filing date, the skilled person knew that the method indicated in paragraphs [0045] and [0053] was the ASTM-D6442 method approved in 1999, which establishes how to determine the copper leach rate from antifouling paints.

The respondent was right in noting that, according to paragraph [0053], the ASTM method was modified for its application in accordance with the invention, but the patent does not explain how it was modified. However, as pointed out by the appellant, the ASTM method requires a measuring temperature of 25°C, while the release rate defined in claim 1 needs to be measured at 10.6°C. Thus, the skilled person would have reasonably assumed that the modification of the ASTM-D6442 method referred to in the patent consisted of measuring the leach rate at 10.6°C instead of at 25°C.

In conclusion, the patent provides the skilled person with sufficient information to ascertain the modified standard method that should be used for determining the leach rate according to the invention. Hence, the board cannot agree with the respondent's view that the patent lacks information essential for measuring the leach rate, considering that the ASTM-D6442 method provides all the essential parameters for testing.

3.1.3 On the second aspect, the patent provides evidence in example 2 and Figure 1 that a marine paint comprising 3 wt.% copper pyrithione particles with a median size of 0.98 µm exhibits a leach rate as defined in claim 1. Furthermore, paragraphs [0045] and [0057] teach that the smaller the copper pyrithione particle size, the higher the leach rate.

Thus, even though the board agrees with the opposition division and the respondent that different paints may exhibit different release rates, it has to acknowledge that the patent discloses a working example and that it teaches the skilled person how to modify a composition according to claim 1 which fails to achieve the required minimum leach rate in order to make it successful, namely by reducing its particle size to lower values that remain within the ranges defined in claim 1.

In this connection, attention is drawn to the fact that the respondent has not provided any evidence refuting the evidence and teaching provided in the patent. In other words, there is no evidence on file that the different leach rates provided by different paints are below the minimum leach rate required in claim 1, and that a too low leach rate cannot be corrected by a reduction of the particle size within the ranges of

granted claim 1. In the absence of such evidence, the board cannot conclude that the information contained in the patent is not sufficient for the skilled person to produce a composition according to claim 1.

Accordingly, the board disagrees with the argument of the opposition division and the respondent that the lack of specification of the paint that should be used for measuring the leach rate prevents the skilled person from carrying out the invention.

3.2 Non-dusting

The objection of lack of sufficiency of disclosure raised in relation to the feature "non-dusting" in granted claims 11 and 13 was not taken into consideration by the opposition division because the feature was not essential in claim 1 (see decision, point 3.2a).

The appellant has argued that this objection was not discussed in opposition proceedings and therefore cannot be raised in appeal either.

In this respect, the board notes that the respondent mentioned in the context of sufficiency of disclosure during the opposition proceedings that the patent did not disclose any method of determining whether a dispersion is non-dusting (see notice of opposition, point 7.2 and letter dated 21 January 2013, page 3). Essentially the same comment was submitted in appeal (see respondent's reply dated 14 January 2014, point 3.3). However, neither in opposition nor in appeal proceedings has the respondent explained why the lack of a method of determining whether a dispersion is non-dusting would prevent the skilled person from carrying

out the invention without undue burden. In the board's view, however, such an explanation was necessary, because the feature "non-dusting" in claims 11 and 13 refers to a dispersion of solid particles into a liquid, and it is difficult to understand how such a dispersion can be other than "non-dusting", considering that the solid particles in such a formulation are by definition homogeneously distributed within the continuous liquid phase. Hence, the board holds that the objection of lack of sufficiency directed to the feature "non-dusting" has not been substantiated.

3.3 The board therefore concludes that the invention defined in the main request is sufficiently disclosed.

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 for further prosecution.**

The Registrar: The Chairman:

M. Schalow A. Lindner

Decision electronically authenticated