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Case Number: T 2010/13 - 3.3.02

Application Number: 04819020.1

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Language of the proceedings: EN

Title of invention:
FUNGICIDAL AQUEOUS SUSPENSION CONCENTRATE

Patent Proprietor:
Sumitomo Chemical Company, Limited

Opponents:
Vondrovsky, Gabriel
BASF SE
SYNGENTA LIMITED

Headword:

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step

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Catchword:

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Case Number: T 2010/13 - 3.3.02

D E C I S I O N
of Technical Board of Appeal 3.3.02
of 18 February 2019

Appellant 1: (Opponent 1)	Vondrovsky, Gabriel Schellingstrasse 78 80799 Munich (DE)
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Appellant 3: (Opponent 3)	SYNGENTA LIMITED Syngenta Jealott's Hill International Research Centre Bracknell Berkshire RG42 6EY (GB)
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Decision under appeal: **Interlocutory decision of the Opposition Division of the European Patent Office posted on 23 August 2013 concerning maintenance of the European Patent No. 1686853 in amended form.**

Composition of the Board:

Chairman M. O. Müller
Members: A. Lenzen
M. Blasi

Summary of Facts and Submissions

I. This decision concerns the appeals filed by opponents 1 to 3 against the interlocutory decision of the opposition division according to which European patent No. 1 686 853 in amended form and the invention to which it relates were found to meet the requirements of the EPC.

II. In their notices of opposition, opponents 1 to 3 had requested revocation of the patent in its entirety on the grounds that the claimed subject-matter was neither novel nor inventive (Article 100(a) EPC), that the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC), and that the subject-matter of the patent extended beyond the content of the application as filed (Article 100(c) EPC).

The documents submitted during the opposition proceedings included:

D2 WO 00/08931 A1, and

D46 Trends in pesticide formulations, A. Knowles, 2001, pages 37, 38 and 122.

III. The decision of the opposition division was based on the patent as granted (main request) and auxiliary requests 1 to 3.

Only auxiliary request 3 was deemed to meet the requirements of the EPC. Its claimed subject-matter was deemed, *inter alia*, to involve an inventive step having

regard to the disclosure of D2 as the closest prior art.

IV. This decision was appealed by opponents 1 to 3 (hereinafter referred to as appellants 1 to 3).

V. The patent proprietor (hereinafter referred to as respondent) replied to the statements of grounds of appeal, submitting sets of claims of several auxiliary requests.

VI. In view of the parties' requests for oral proceedings, the board issued a summons to oral proceedings on 2 August 2018, and, subsequently, a communication under Article 15(1) RPBA. On 18 February 2019, oral proceedings were held before the board. In accordance with Rule 115(2) EPC, the board decided to continue the proceedings in appellant 3's absence and to treat appellant 3 as relying on its written case pursuant to Article 15(3) RPBA. In the course of the oral proceedings, *inter alia*, the respondent withdrew all claim requests except for the main request and the third and sixth auxiliary requests. Appellant 1 withdrew its objection against the admission of the sixth auxiliary request into the proceedings.

VII. Each of the appellants 1 to 3 requested that the decision of the opposition division be set aside and that the patent be revoked in its entirety. During the written proceedings, appellant 3 submitted further requests (see the reiteration of appellant 3's requests in the minutes of the oral proceedings) which are however not necessary to be dealt with in the present decision.

VIII. The respondent requested that the patent be maintained on the basis of the main request (identical to auxiliary request 3 held allowable by the opposition division), i.e. that the appeals be dismissed, or, alternatively, that the patent be maintained in amended form on the basis of the sets of claims of the third or sixth auxiliary request filed as auxiliary requests 1 and 4 together with its reply to the statements of grounds of appeal.

IX. Claim 1 of the main request reads as follows:

> *"An aqueous suspension concentrate composition comprising:*
> *5 to 40% by weight based on the composition of one or more fungicide as an active ingredient;*
> *water soluble or water dispersible polyoxyalkylene alkyl ether;*
> *anti-gel forming and anti-caking agent, selected from one or more of the group consisting of ethyleneglycol, diethyleneglycol, propyleneglycol, and dipropylene-glycol;*
> *methacrylic acid-methyl methacrylate-polyethyleneglycol graft copolymer as a dispersant; and water;*
> *wherein the weight ratio of polyoxyalkylene alkyl ether to anti-gel forming and anti-caking agent is 1:1.5 to 1:6."*

Apart from the main request only the third and sixth auxiliary requests were still pending before the announcement of the decision.

Claim 1 of the third auxiliary request differs from claim 1 of the main request only in that

*"the weight ratio of polyoxyalkylene alkyl ether to anti-gel forming and anti-caking agent is **1:1.8 to 1:4**"* (emphasis added).

Claim 1 of the sixth auxiliary request reads as follows:

"An aqueous suspension concentrate composition comprising:
5 to 40% by weight based on the composition of one or more fungicide as an active ingredient;
3 to 15% by weight water soluble or water dispersible polyoxyalkylene alkyl ether;
10 to 30% by weight anti-gel forming and anti-caking agent, selected from one or more of the group consisting of ethyleneglycol, diethyleneglycol, propyleneglycol, and dipropylene-glycol;
0.5 to 10% by weight methacrylic acid-methyl methacrylate-polyethyleneglycol graft copolymer as a dispersant;
0.1 to 5% by weight wetting agent;
0.3 to 5% by weight solid or liquid additive containing preservative, anti-foaming agent and rheology modifier;
and 25 to 70% by weight water;
wherein the weight ratio of polyoxyalkylene alkyl ether to anti-gel forming and anti-caking agent is 1:1.5 to 1:6."

X. The appellants' arguments, in so far as they are relevant to the present decision, can be summarised as follows:

As to the assessment of inventive step, the compositions of comparative examples 11, 18 and 19 of

D2 could be considered as the closest prior art. The composition of claim 1 of the main, the third auxiliary and the sixth auxiliary requests differed therefrom only in that it contained less fungicide. Even if it were acknowledged that reduced fungicide levels resulted in a higher storage stability, the solution to this problem would have been obvious already based on D2. Typical contents of ingredients of suspension concentrates were known from D46. The "caking" of the patent in suit had to be considered as either meaning the same as the "crystal growth" of D2 or at least as also covering it.

Starting from the compositions of examples 1 and 2 of D2 as the closest prior art, the difference to claim 1 was the amount of pesticide, the presence of the polyoxyalkylene alkyl ether, and the fact that the ratio of the amount of that compound to the amount of anti-gel forming and anti-caking agent was above the upper limit of claim 1. None of these distinguishing features led to any technical effect. As regards the third one, by increasing the amount of anti-caking agent in D2 such that its amount was above the upper limit defined in claim 1, caking was even more prevented. So, if anything, the storage stability in D2 was higher rather than that obtained by the claimed composition.

XI. The respondent's arguments in so far as they are relevant to the present decision, can be summarised as follows:

Starting from the compositions of the comparative examples 11, 18 and 19 of D2 as the closest prior art, the skilled person would not reduce their fungicide content in order to obtain a suspension concentrate

having a higher storage stability. As evident from a comparison of the compositions of the examples and the comparative examples of D2, the skilled person would rather remove the polyoxyalkylene alkyl ether from these compositions. The "caking" of the patent in suit was different from the "crystal growth" of D2 as crystals did not necessarily form a cake.

The composition of claim 1 of the main, the third auxiliary and the sixth auxiliary requests was distinguished from the composition of examples 1 and 2 of D2 as the closest prior art *inter alia* in that it contained both the polyoxyalkylene alkyl ether and the anti-gel forming and anti-caking agent in a specific ratio. As evident from a comparison of the composition of example 4 with that of comparative example 2 and paragraph [0023] of the patent in suit, said ratio was linked to the effect of a higher storage stability.

Reasons for the Decision

Main request

1. Inventive step

1.1 The disclosure of D2 was considered by appellants 1 and 2 and the respondent as the closest prior art.

Appellants 1 and 2 started from the compositions of examples 11, 18 and 19. The respondent entered the discussion based thereon and did not contest their suitability as a starting point for the discussion of inventive step. Therefore, in a first approach, the board assessed the inventive step starting from those examples.

Yet, the respondent also pointed out that these examples were merely comparative examples and that only examples 1 and 2 were actually according to the invention of D2 (as evident from D2: page 3, lines 20-21). Therefore, in a second approach, the board analysed inventive step also starting from examples 1 and 2 of D2.

As both approaches led to the same conclusion, the board did not have to further consider whether the comparative examples could indeed be used as a suitable starting point for the assessment of inventive step.

1.2 Starting point a): the compositions of comparative examples 11, 18 and 19 of D2

1.2.1 According to the appellants 1 and 2, and as not contested by the respondent, the composition of each of the comparative examples 11, 18 and 19 was an equally suitable starting point. By way of illustration, the composition of comparative example 19 is considered in the following.

The composition of comparative example 19 (D2: table 1) comprises

- water,
- 55% by weight of pyrimethanil,
- Atlox 4894,
- propylene glycol, and
- Atlox 4913.

1.2.2 Pyrimethanil is a fungicide as required by claim 1 (D2: page 1, line 7). In view of the very high pyrimethanil content, the composition of this comparative example qualifies as an aqueous suspension concentrate composition (derivable at least implicitly from D2: page 1, lines 7-14).

Atlox 4894 is, or at least comprises, a polyoxyethylene alkyl ether (D2: page 2, line 24). As any chemical compound is water soluble or water dispersible, said polyoxy**ethylene** alkyl ether is a *"water soluble or water dispersible polyoxy**alkylene** alkyl ether"* (emphasis added) as stipulated in claim 1 ("ethylene" being a specific embodiment of "alkylene").
Propylene glycol is specifically mentioned in claim 1 to be one of the possible *"anti-gel forming and anti-caking agent*[s]".
Atlox 4913 is, or at least comprises, polymethyl methacrylate-polyethylene glycol graft copolymer acting as a dispersant (D2: page 2, lines 25-26).

Further, it was not contested by the respondent,
- that the polymethyl methacrylate-polyethylene glycol graft copolymer of Atlox 4913 is a *"methacrylic acid-methyl methacrylate-polyethyleneglycol graft copolymer"* as stipulated in claim 1, and
- that the weight ratio of the polyoxyethylene alkyl ether of Atlox 4894 to propylene glycol falls within the range of 1:1.5 to 1.6 as required by claim 1.

1.2.3 Based on the above, the composition of claim 1 is distinguished from comparative example 19 of D2 only in that

(i) it contains less fungicide (5 to 40% by weight in claim 1 vs. 55% by weight in D2).

1.2.4 The patent in suit does not compare compositions with each other having fungicide levels falling within and falling outside the range of 5 to 40% by weight.

In view of D2, the respondent emphasised that the effect sought therein, i.e. the reduction of **crystallisation** during storage, was different from the one sought in the patent in suit, i.e. the reduction of **caking** during storage. The board does not agree. Both the crystallisation of D2 and the caking of the patent in suit are closely related to the precipitation/ flocculation of the active ingredient and thus refer to the same type of phenomenon.

The composition of comparative example 19 of D2, comprising 55% by weight of fungicide, shows a significant degree of crystal growth and thus caking (see considerations in the preceding paragraph) after having been stored for two weeks at 54 °C (D2: page 4, lines 1-3). Contrary thereto, the compositions according to the invention of the patent in suit, each of them comprising fungicide(s) at levels as required by claim 1, show no caking after having been stored under the same conditions. Based on this comparison, one may accept for the sake of argumentation in the respondent's favour that the distinguishing feature identified above goes along with a higher storage stability.

1.2.5 Based on the above, the objective technical problem is to be considered as the provision of a suspension

concentrate composition having a higher storage stability.

1.2.6 The solution to this objective technical problem in the form of claim 1, however, does not involve an inventive step:

Already D2 (page 1, lines 7-14) teaches that increasing pyrimethanil contents to over 40% w/v gives rise to stability problems during storage. The skilled person would thus lower the content of pyrimethanil in the composition of comparative example 19 accordingly when seeking to improve its storage stability.
In order to still have a suspension concentrate before them, the skilled person would, at the same time, keep the concentration of pyrimethanil over a certain minimum threshold. As clear from the textbook D46 (table 7.1), a typical minimum threshold for the active ingredient in suspension concentrate compositions is 20% w/w.

Thus, by following the teaching of D2 and respecting what is common general knowledge, the skilled person would arrive at a composition falling within the subject-matter of claim 1 without having to apply any inventive skills.

The respondent argued that the skilled person would not reduce the amount of fungicide but the amount of polyoxyalkylene alkyl ether instead. This was clear from a comparison of the compositions of the comparative examples with the ones of examples 1 and 2 of D2, the latter not containing polyoxyalkylene alkyl ether(s) and not showing crystal growth.
The board can not accept this argument. As acknowledged by the respondent, D2 lacks a general statement in this

regard. Moreover, the compositions of most of the comparative examples of D2 do not contain a polyoxyalkylene alkyl ether either, and among those not containing it many also suffer from crystallisation during storage. The general teaching, as suggested by the respondent, cannot therefore be derived from D2. Contrary thereto, the compositions of all examples and comparative examples have very high levels of the fungicide pyrimethanil in common, and those are specifically associated in D2 with the problem of storage stability (see above). Contrary to the respondent, the board interprets this as a clear pointer to lowering the content of fungicide.

1.2.7 Thus, starting from comparative example 19, and in the same way from comparative examples 11 and 18 of D2, the subject-matter of claim 1 of the main request does not involve an inventive step.

1.3 Starting point b): the compositions of examples 1 and 2 of D2

1.3.1 Both the composition of example 1 and that of example 2 are suspension concentrate compositions according to the invention of D2 (D2: page 3, line 20; claim 1). They contain (D2: table 1)

- 33% by weight of water,

- 55% by weight of pyrimethanil,

- 5.5% by weight of propylene glycol, and

- Atlox 4913.

Compared to the composition of comparative example 19, the compositions of examples 1 and 2 do not contain a polyoxyalkylene alkyl ether. As a result, the amount of the anti-gel forming and anti-caking agent (propylene glycol) relative to the amount of the (absent) polyoxyalkylene alkyl ether in claim 1 is lower than that in examples 1 and 2 of D2. More specifically, claim 1 requires a weight ratio of polyoxyalkylene alkyl ether to anti-gel forming and anti-caking agent of 1:1.5 to 1:6. The amount of anti-gel forming and anti-caking agent, relative to that of the polyoxyalkylene alkyl ether is thus at maximum 6:1 according to claim 1. Contrary thereto, in examples 1 and 2 of D2 it is 5.5:0.

1.3.2 Based on the analysis provided in connection with comparative example 19 above, the composition of claim 1 is distinguished from the compositions of examples 1 and 2 of D2 in that

(i) it contains less fungicide (5 to 40% by weight in claim 1 vs. 55% by weight in D2),

(ii) it further comprises water soluble or water dispersible polyoxyalkylene alkyl ether, and in such an amount that

(iii) the amount of anti-gel forming and anti-caking agent relative to the amount of polyoxyalkylene alkyl ether is lower than in examples 1 and 2 of D2.

1.3.3 As to the distinguishing feature (i), the following is noted: the compositions of examples 1 and 2 of D2, comprising 55% by weight of fungicide, show no or only very light crystal growth and hence caking after having

been stored for two weeks at 54 °C (D2: page 4, line 5). The compositions according to the invention of the patent in suit, comprising fungicide(s) in amounts as required by claim 1, similarly show no caking after having been stored under the same conditions. The compositions of examples 1 and 2 of D2 and the compositions of the patent in suit do not differ from each other in terms of storage stability.

The respondent did not argue as to a technical effect linked to the distinguishing feature (ii). The board does not see either how to possibly derive an effect related thereto from the patent in suit.

With regard to the distinguishing feature (iii), the respondent argued that the upper limit (i.e. 1:6) for the relative amount of anti-gel forming and anti-caking agent was linked to an improved storage stability as evident from paragraph [0023] in the patent in suit. The board does not agree. The sentence hinted at by the respondent in paragraph [0023] of the patent in suit reads: "*When the weight ratio of polyoxyalkylene alkyl ether to anti-gel forming and anti-caking agent is less than 1:1.5 or exceeds 1:6, it is difficult to maintain the stability of the preparation during storage.*" This sentence indeed suggests the upper limit of the range in claim 1 to be linked to an improved storage stability. Yet, for the board it is not plausible why an effect caused by an ingredient (the anti-gel forming and anti-caking agent) should suddenly turn around upon incorporation of additional quantities thereof. After all, it is the object of the anti-gel forming and anti-caking agent to prevent caking and thus render the preparation more stable during storage. Higher amounts thereof should then bring about an even higher storage stability and not a decrease. Thus, also the

distinguishing feature (iii) is not linked to a technical effect.

1.3.4 Based thereon, the objective technical problem can be considered as the provision of a further storage stable suspension concentrate.

1.3.5 The solution to this objective technical problem in the form of claim 1 does not involve an inventive step:

As already explained above, the variation of the amount of the fungicide (distinguishing feature (i)) is arbitrary and thus does not require any inventive skills and is even suggested already in D2 (see page 1, lines 7-14).

Polyoxyalkylene alkyl ether (distinguishing feature (ii)), more specifically aliphatic alcohol ethoxylate, is disclosed in D46 as a typical wetting/dispersing agent used in suspension concentrate ("SC" in D46) formulations. Hence, the inclusion of this compound in the composition of claim 1 does not render the claimed subject-matter inventive either.

Lastly, in the same way as for the fungicide amount, the amount of anti-gel forming and anti-caking agent, relative to the polyoxyalkylene alkyl ether amount (distinguishing feature (iii)) represents an arbitrary variation of that amount that does not contribute to inventive step.

1.3.6 Thus, the subject-matter of claim 1 of the main request does not involve an inventive step when starting from the compositions of examples 1 or 2 of D2 either.

1.4 Therefore, the main request is not allowable.

Third auxiliary request

2. Admittance

During the oral proceedings, the board decided to admit the third auxiliary request into the proceedings. In view of its non-allowability (see below), reasons for its admittance do not need to be given.

3. Inventive step

3.1 Claim 1 of the third auxiliary request differs from claim 1 of the main request only in so far as the weight ratio of polyoxyalkylene alkyl ether to anti-gel forming and anti-caking agent has been limited to the range of **1:1.8 to 1:4**.

3.2 Analogous to the above, the upper limit (i.e. 1:4) of this range has not been shown to be linked to a technical effect. The reasoning above as to the main request starting from examples 1 and 2 of D2 thus applies *mutatis mutandis*.

3.3 Claim 1 differs from the compositions of comparative examples 11, 18 and 19 by the fungicide amount and, if at all, by the amount of anti-gel forming and anti-caking agent relative to that of the polyoxyalkylene alkyl ether. As set out above for the main request, these two amounts do not contribute to inventive step.

3.4 Thus, at least the subject-matter of claim 1 of the third auxiliary request does not involve an inventive step. Therefore, the third auxiliary request is not allowable.

Sixth auxiliary request

4. Inventive step

4.1 The compositions of examples 1 and 2 of D2 have already been described above.

In the context of the sixth auxiliary request, the respondent did not contest that the amount of the active ingredient contained in Atlox 4913 falls within the range given for the methacrylic acid-methyl methacrylate-polyethyleneglycol graft copolymer in claim 1, i.e. from 0.5 to 10% by weight.

4.2 It follows that the composition of claim 1 is distinguished from D2, examples 1 and 2, in that

(i) it contains less fungicide (5 to 40% by weight in claim 1 vs. 55% by weight in D2),

(ii) it comprises **3 to 15% by weight** water soluble or water dispersible polyoxyalkylene alkyl ether, and in such an amount that

(iii) the amount of anti-gel forming and anti-caking agent relative to the amount of polyoxyalkylene alkyl ether is lower than in examples 1 and 2 of D2

(iv) **it contains an absolute amount of 10 to 30% by weight anti-gel forming and anti-caking agent,**

(v) **0.1 to 5% by weight wetting agent, and**

(vi) **0.3 to 5% by weight solid or liquid additive containing preservative, anti-foaming agent and rheology modifier.**

The features not emphasised above are those features which distinguish the composition of claim 1 of the main request over the compositions of examples 1 and 2 of D2. As to these features, reference is made to the considerations with regard to the main request. The features emphasised in bold above are additional distinguishing features not present in claim 1 of the main request. These features have not been shown to be linked to a technical effect. Such an effect was also not relied upon by the respondent.

4.3 The objective technical problem thus remains the provision of a further storage stable suspension concentrate.

4.4 Faced with this objective technical problem, the skilled person would not have to apply inventive skills to arrive at the subject-matter of claim 1: In the absence of any technical effect, the newly introduced distinguishing absolute amounts of polyoxyalkylene alkyl ether and anti-gel forming and anti-caking agent (features (ii) and (iv) above) represent arbitrary variations of quantities of ingredients. Such arbitrary variations are within the routine abilities of the skilled person and thus cannot contribute to inventive step.

The distinguishing features (v) and (vi) relate to ingredients and their amounts which are common in the field of suspension concentrates. That was not contested by the respondent. Their incorporation does not require inventive skills either.

4.5 Starting from examples 1 and 2 of D2, the subject-matter of claim 1 is thus not inventive.

4.6 Starting from the compositions of comparative examples 11, 18 and 19, the same additional distinguishing features as with regard to examples 1 and 2 are, at most, present. For the same reasons as given above under point 4.4, these additional distinguishing features do not contribute to inventive step.

4.7 In summary, the subject-matter of claim 1 of the sixth auxiliary request does not involve an inventive step. Therefore, the sixth auxiliary request is not allowable.

5. As none of the claim requests complies with the requirements of the EPC, the patent is to be revoked.

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:

N. Maslin M. O. Müller

Decision electronically authenticated